

SERVICE MANUAL

BE-3E CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-28DS20U	RM-888	UK	SCC-Q25D-A	KV-28DX20U	RM-888	UK	SCC-Q25C-A
KV-32DS20U	RM-888	UK	SCC-Q25F-A	KV-32DX20U	RM-888	UK	SCC-Q25E-A



TRINITRON® COLOR TV
SONY®



ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
UK	I	NICAM Stereo	UHF : B21-B69	PAL NTSC4.43, NTSC3.58 (VIDEO IN)

MODEL	28DS20U	32DS20U	28DX20U	32DX20U
Power Consumption	222W	209W	195W	185W

[PICTURE TUBE]

KV-28DS20U/28DX20U FD Trinitron Wide
Approx. 71 cm (28 inches)
(Approx. 66 cm picture measured diagonally)
102 degree deflection

KV-32DS20U/32DX20U FD Trinitron Wide
Approx. 82 cm (32 inches)
(Approx. 76 cm picture measured diagonally)
102 degree deflection

Input/Output Terminals

[REAR]

→ 21-pin Euro connector (CENELEC standard).

- Inputs for Audio and Video signals.
- Inputs for RGB.
- Outputs of TV Video and Audio signals.

→ 21-pin Euro connector

- Inputs for Audio and Video signals.
- Inputs for S video.
- Outputs for Video and Audio signals (selectable).

→ 21-pin Euro Connector

- Inputs for Audio Video Signals
- Inputs for S Video

→ Phono jacks

- Outputs for Audio Signals

Centre Speaker Terminals (KV-28DS20U/32DS20U only)

Surround Speaker Terminals (KV-28DS20U/32DS20U only)

[FRONT]

→ 3 Video output - phono jack

→ 3 Audio inputs - phono jacks

→ S Video input - 4 pin din

→ Headphone jack : stereo minijack

Sound output	2 x 20 W (Music Power)
Subwoofer	20 W (Music Power)
Surround	2 x 5 W (Music Power) (KV-28DS20U/32DS20U only)
Centre	10 W (Music Power) (KV-28DS20U/32DS20U only)

Power requirements	220 - 240V
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Dimensions

KV-28DS20U/28DX20U	Approx 761x496x525 (w/h/d)
KV-32DS20U/32DX20U	Approx 874x563x571 (w/h/d)

Weight

KV-28DS20U/28DX20U	Approx 44.0kg
KV-32DS20U/32DX20U	Approx 62.0kg

Supplied accessories	RM-888 Remote Commander (1) IEC designated R6 batteries (2)
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Other features	NICAM, FASTEXT, TOPTEXT, DIGITAL TELETXT DOLBY PROLOGIC*, ELECTRONIC PROGRAMME GUIDE (EPG) * (KV-28DS20U/32DS20U)
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[RM-888]

Remote control system	Infrared control
Power requirements	3V dc 2 batteries IEC designation R6 (size AA)

Dimensions	Approx 44x209x23mm (w/h/d)
Weight	Approx 89g (Not including battery)

Design and specifications are subject to change without notice.

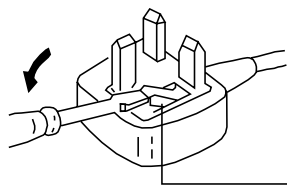
Model Name	KV-28DS20U	KV-28DX20U
Item	KV-32DS20U	KV-32DX20U
Pal Comb	OFF	OFF
PIP	OFF	OFF
RGB Priority	OFF	OFF
Woofer Box	ON	ON
Scart 1	ON	ON
Scart 2	ON	ON
Front in (3)	ON	ON
Scart 4	ON	ON
Projector	OFF	OFF
AKB in 16:9 mode	ON	ON
Norm B/G	OFF	OFF
Norm I	ON	ON
Norm D/K	OFF	OFF
Norm AUS	OFF	OFF
Norm L	OFF	OFF
Norm SAT	OFF	OFF
Norm M	OFF	OFF
Teletext	ON	ON
Nicam Stereo	ON	ON
Language Preset	English	English

WARNING

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the  mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE OUTLET SOCKET.

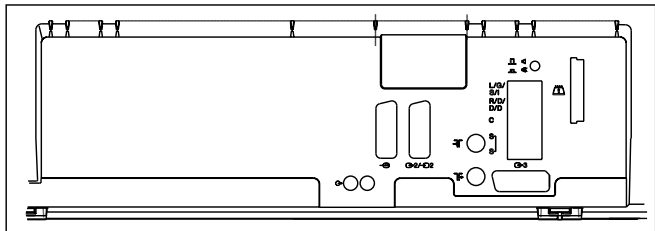
When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with a screwdriver blade and replace the fuse.

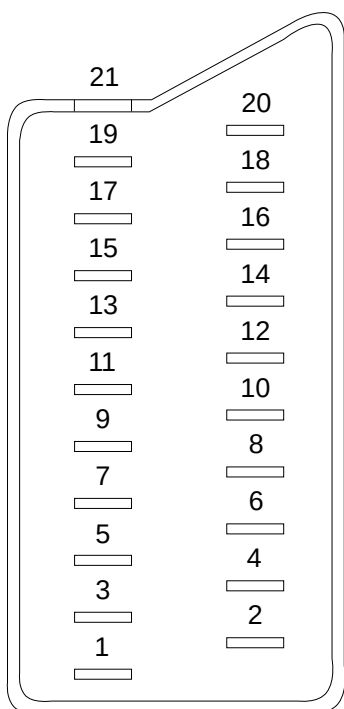
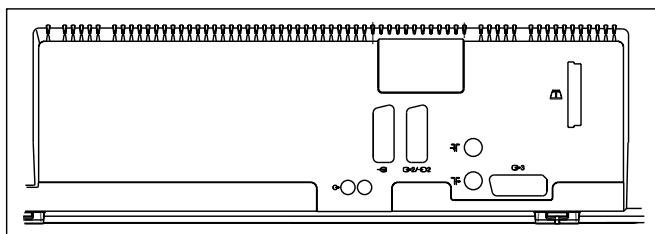
KV-28DS20U/32DS20U

21 pin connector (→ 000, ↔ 2/ → 3)



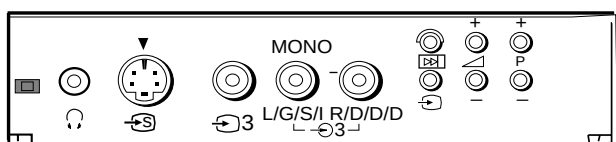
KV-28DX20U/32DX20U

21 pin connector (→ 000, ↔ 2/ → 33)



Pin No	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedance : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedance : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	-	-	Red input	0.7 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1-3V) Low state (0-0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	-	-	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz



Pin No.	Signal	Signal Level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm, positive Sync. 0.3V -3 + 10dB
4	C (S signal) input	0.3V ± 3dB 75 ohm, positive Sync.

TABLE OF CONTENTS

Section	Title	Page	Section	Title	Page
	Warning and Caution	3	4. CIRCUIT ADJUSTMENTS		
	Self-Diagnostic Function	6	4-1.	Electrical Adjustments	27
1. GENERAL			4-2.	'TT' Test Mode	30
	Overview of the Remote		4-3.	'T' Test Mode	31
	Control Buttons	10	5. DIAGRAMS		
	Choosing a Language for the		5-1.	Block Diagrams (1)	33
	TV Menu Screens	10		Block Diagrams (2)	37
	Automatically Tuning the TV	11		Block Diagrams (3)	41
	Re-arranging the TV Channels	11		Block Diagrams (4)	45
	Adjusting the Picture	12	5-2.	Circuit Board Location	48
	Adjusting the Sound	12	5-3.	Schematic Diagrams and	
	Setting up Dolby Prologic	13		Printed Wiring Boards	48
	Using the Further Programme			* C Board	49
	Preset Feature	13		* D Board	55
	Manually Tuning the TV	14		* D2 Board	58
	Viewing Standard Teletext	14		* A1 Board (KV-28DS20U/ KV-32DS20U)	59
	Viewing Digital Teletext	15		* VM Board	61
	Electronic Programme Guide (EPG)	15		* J Board (KV-28DS20U/ KV-32DS20U)	64
	Specifications	17		* H Board	66
	Troubleshooting	17		* A Board	73
2. DISASSEMBLY				* A2 Board	79
2-1.	Rear Cover Removal	18		* D1 Board	84
2-2.	Chassis Assy Removal	18		* N Board	89
2-3-1.	Service Position (1)	18	5-4.	Semiconductors	105
2-3-2.	Service Position (2)	18	5-5.	IC Blocks	107
2-4.	Wire Dressing	19	6. EXPLODED VIEWS		
2-5.	A Board Removal	19	6-1.	Chassis	109
2-6.	A Extension Board	19	6-2.	Picture Tube	110
2-7.	Picture Tube Removal	20	6-3.	Centre Speaker and	
	Removal and Replacement of the			Surround Speaker	
	Main - Bracket Bottom Plates	21		(KV-28DS20U/32DS20U only)	111
3. SET-UP ADJUSTMENTS			7. ELECTRICAL PARTS LIST		112
3-1.	Beam Landing	22			
3-2.	Convergence	23			
3-3.	Screen G2	25			
3-4.	Focus	25			
3-5.	White Balance	26			

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP

WARNING !!

AN ISOLATING TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ !!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

BE-3E SELF DIAGNOSTIC SOFTWARE

The errors indicated below can be read using an Error Reader Display (Part Number S-188-900-10) connected to the service connector. Once an error has been detected it will then be displayed on the two digit error reader. During the power up procedure and during normal run time, the micro's self diagnostic procedures monitor for various errors. Errors displayed refer to the table indicated below.

Error Number	Error Description
00	No error (TV Error Reader shows 00 in normal condition)
01	Not allowed (may be confused with Sircs response flash on LED)
02	Protection circuit trip (OCP, OVP & No V-Sync)
03	Reserved for OVP (Included in error 2 for BE-3E)
04	Reserved for No V-Sync (Included in error 2 for BE-3E)
05	AKB
06	IIC Scl Low <Power Up only>
07	IIC Sda Low <Power Up only>
08	IIC Sda & Scl Low <Power Up only>
09	Jungle controller no acknowledge <Power Up only>
10	Video Switch (CXA2040) no acknowledge <Power Up only>
11	Tuner no acknowledge
12	MSP no acknowledge
13	NVM no acknowledge
14	AV switch (CXA2089) no acknowledge (DS20 & DX20)
15	Not used
16	Port Expander (CXA1875) no acknowledge (DS20 & DX20)
17	Not used
18	Dynamic Convergence (CXA8070) no acknowledge
19	Cannot Initialise jungle (after initial power on check OK) - <Chassis Initialisation>
20	Jungle controller response failure after power up check (+9V test)
21	Video Switch (CXA2040) cannot power on reset - <Chassis Initialisation>
22	Video Switch (CXA2040) response failure after power up check (+9V test)
23	NVM acknowledge fail after initialisation (STBY +5V - same as micro!)
24	MSP run-time failure <May Not Be Fatal - Display On Error Reader>
25	DSP run-time failure <May Not Be Fatal - Display On Error Reader>
26	M3L bus Clock low time out after data send <Run-Time Failure>
27	M3L bus Clock low time out after data send <At Power Up Check>
28	M3L bus Clock low time out after data send <At Initialisation>
29	M3L Txd Low <Power Up Only>
30	M3L Rxd Low <Power Up Only>
31	M3L Enable Low <Power Up Only>
32	Compact Text test fail <Power Up Only>
33	Compact Text does not respond (+5V test)
34	Compact text run-time failure <May Not Be Fatal - Display On Error Reader>

Protection Error (Error 2):

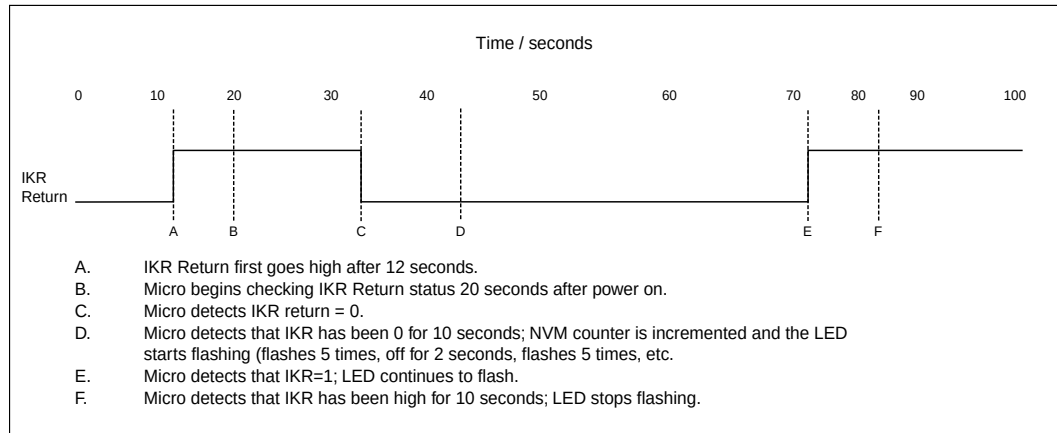
Once every main loop (approximately 200ms OSD mode, 50ms text or menu mode), the micro checks the protection pin (pin 66). If the protection pin is high 6 successive times, a protection error is diagnosed. The protection pin is **not** checked during the first 3 - 4 seconds after AC on.

If this error is diagnosed, the respective NVM register will be updated and the set goes straight into diagnostic standby with 2 flashes - no reset is attempted.

AKB Error (Error 5):

Once every main loop the micro checks the AKB stability by reading the IKR return from the Jungle IC. IKR=1 means that the AKB is stable, IKR=0 means that the AKB is unstable. If the AKB status is unstable for 10 seconds, an AKB error is diagnosed. AKB stability is not checked during the first 20 seconds after AC switch on.

If this error is diagnosed, the respective NVM register will be updated and the response LED will flash 5 times continually, but the set will not go into standby mode. If the AKB status becomes stable, and remains stable for 10 seconds, the LED will stop flashing.



Startup Diagnostic Errors (Errors 6-18, 27, 29-32):

NVM	Error Description
6	SCL pin low
7	SDA pin low
8	Both SCL and the SDA pins are low
9	No acknowledge from the jungle (CXA2076)
10	No acknowledge from the video switch (CXA2040)
11	No acknowledge from the tuner
12	No acknowledge from the MSP
13	No acknowledge from the NVM
14	No acknowledge from the CXA2089 video switch (DS20 & DX20)
16	No acknowledge from the CXA1875 video Port Expander (DS20 & DX20)
18	No acknowledge from the Dynamic Convergence (CXA8070)
27	M3L_TXD pin low after Compact Text RAM test.
29	M3L_TXD pin low
30	M3L_RXD pin low
31	M3LEN pin low
32	Compact Text RAM test fail

If any of these errors are detected, the respective NVM register will be incremented. The software will then carry on with the power up sequence.

General IIC Device Run-time Errors (Errors 19-23):

NVM	Error Description
19	No acknowledge from Jungle when attempting to initialise.
20	No acknowledge from Jungle when attempting to read registers.
21	AV Switch cannot complete reset during initialisation.
22	No acknowledge from AV Switch when attempting to read registers.
23	No acknowledge from NVM when attempting to read or write.

If any of these errors are detected, the respective NVM register will be incremented and the software will carry on.

Compact Text Run-time Errors (Errors 26, 28, 33 & 34):

NVM	Error Description
26	M3L_TXD pin low when checking register 81 (implies that no communication was possible).
28	M3L_TXD pin low when attempting to initialise (implies that no communication was possible).
33	Compact Text RAM test failed during initialisation of devices.

In the case of these errors, the 'device reset' pin will be held low for 60ms, causing a hardware reset of Compact Text. Following this reset, a longer timeout will be allowed for the M3L bus to recover. If the error still exists, the NVM register will be incremented and the software will carry on.

NVM	Error Description
34	Register 81 check fail, but M3L_TXD pin high (implies that Compact Text has either reset or become corrupted).

In the case, the 'device reset' pin will be held low for 60ms, causing a hardware reset of Compact Text. Compact Text will then be re-initialised and the NVM counter updated. This is the same as for errors 26, 28 and 33 except that the M3L bus timeout is not changed.

MSP and DSP Run-time Errors (Errors 24 & 25):

NVM	Error Description
24	Error 24 can be caused by any of the following : - After MSP initialisation, Scart Prescale Register check fail (implies that the MSP has either reset or become corrupted). - MSP fails to acknowledge reset instruction. - Scart Prescale Register check fail (implies that the MSP has either reset or become corrupted).
25	- DSP test byte corrupted (implies that the MSP has either reset or become corrupted).

For both these errors, the software will refresh the MSP and DSP registers. If the errors still exist, the NVM counter will be incremented, and the software will carry on.

Error Display Mode

Error Display Mode is entered by the following sequence of commands :

Standby -> Information -> Digit 5 -> Volume Down -> TV

This mode will display a special menu, which will list all possible errors and the number of occurrences of each error (0 - 255, as stored in the NVM). There will also be a display of the current error (00 if no error). This display mode will appear as follows :

ERROR DISPLAY MODE			
Current Error Code = 00			
Error Code	Occurrences	Error Code	Occurrences
2	2	19	0
3	--	20	0
4	--	21	0
5	0	22	0
6	0	23	0
7	0	24	0
8	0	25	4
9	0	26	5
10	0	27	89
11	0	28	3
12	0	29	0
13	0	30	0
14	0	31	0
15	3	32	0
16	0	33	3
17	0	34	38
18	6		

Whilst in this mode, the number of occurrences of each error can be reset to 0 by following sequence of Sircs commands: Digit 8 -> Digit 0. 'TT08' will also reset this NVM data.

This mode can only be exited by switching off the TV.

The Current Error Code can also be read by using a TV Error Reader (IIC slave address 42H). This device simply receives 1 data byte, which is the error number in binary coded decimal form.

The operating instructions mentioned here are partial abstracts from the 'Operating Instruction Manual'. The page numbers of the 'Operating Instruction Manual' remain as in the manual.

Overview

Overview of the remote control buttons

To mute sound

Press to mute TV sound. Press again to restore the sound.

To reveal on screen information

Press to reveal all on-screen indications. Press again to cancel. In teletext mode, press to reveal concealed information (eg answers to a quiz) then press again to cancel.

To select channels

Press the numbered buttons to select channels.

For double digit programme numbers, e.g.23, press -/- first, then the buttons 2 and 3. If you enter an incorrect first digit, select -/- button again to enter the programme number of your choice.

To select EPG

Press to display the Electronic Programme Guide. Press again to remove display.

To select Teletext

Press to switch on Teletext.

To display picture menu

Press to change the picture settings. Press the OK button to remove the display.

To display sound menu

Press to change the sound settings. Press the OK button to remove the display.

To adjust TV volume

Press to adjust the volume of the TV.

To temporarily switch off TV

Press to temporarily switch off TV. Press again to switch on from standby mode. To save energy, we recommend switching off completely when TV is not in use.

NOTE: After 15-30 minutes without a TV signal and without any button being pressed, the TV switches automatically into standby mode.

To select input signal or freeze teletext

Press to select inputs from the TV sockets (see Using Optional Equipment section). In teletext mode, press to freeze the displayed page. Press once again to cancel.

To return to previous channel

Press to return to the previous channel you were watching. Note: This can be done only after watching the present channel for 5 seconds.

To display the menu

Press if you wish to use the TV menu system. Press again to remove the menu from the TV screen.

To select menu items

Use these buttons and the OK button to select the options available in the menu system of this TV.

To change screen format

Press to change the size of the screen.

See Teletext section of manual for details.

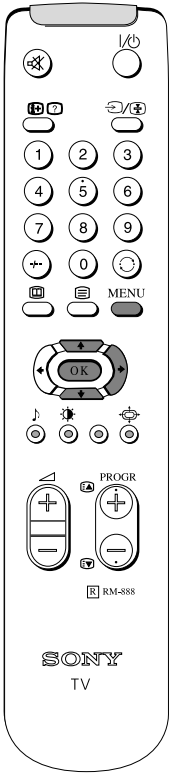
To select channels

Press to select channels.

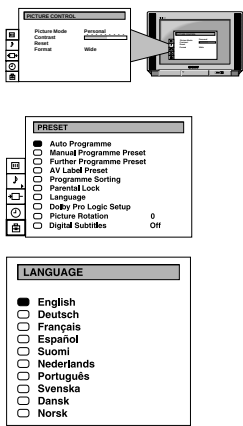
Additional TV Features

Choosing a language for the TV menu screens

The TV consists of a menu system which can appear on screen in a variety of languages. Use the following feature to select the language that best suits you.



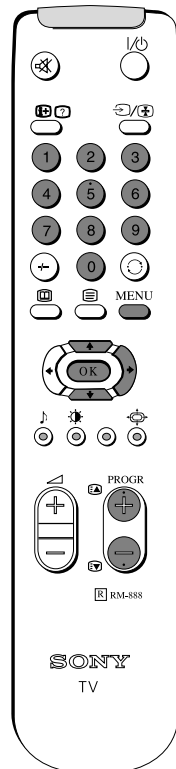
1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the $\uparrow$ or $\downarrow$ buttons to select the  symbol on the menu screen then press the $\rightarrow$ button to enter the 'PRESET' menu.
3. Press the $\uparrow$ or $\downarrow$ buttons to select 'Language' on the menu screen then press the $\rightarrow$ button to enter the 'LANGUAGE' menu.
4. Press the $\uparrow$ or $\downarrow$ buttons to select your chosen language.
5. Press the OK button to confirm your selection.
6. Press the MENU button to remove the display from the TV screen.



Additional TV Features

Automatically tuning the TV

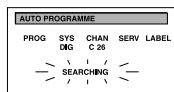
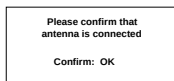
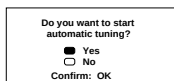
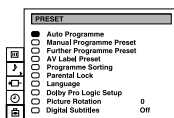
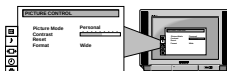
You have already tuned in all available channels using the 'Automatically tuning the TV' section at the start of this manual. If you need to repeat the tuning procedure however, follow the instructions below and the TV automatically searches and stores all available channels for you.



1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the $\blacktriangle$ or $\blacktriangledown$ buttons on the remote control to select the $\square$ symbol on the menu screen then press the $\blacktriangleright$ button to enter the 'PRESET' menu.
3. Press the $\blacktriangle$ or $\blacktriangledown$ buttons to select 'Auto Programme' then press the $\blacktriangleright$ button to display the autotune menu.
4. Press the $\blacktriangle$ or $\blacktriangledown$ buttons to select 'YES' then press the OK button to confirm.
5. A new menu appears asking you to check that the antenna is connected. Ensure the antenna is connected then press the OK button to confirm. The TV starts to automatically search and store all available channels for you. Please be patient and do not press any buttons once this search and store operation has started.
6. When the automatic tuning procedure is complete, the menu disappears from the TV screen. Press the PROGR+/- or the numbered buttons on the remote control to view the TV channels.

Notes: Press the MENU button if you wish to stop the automatic tuning procedure.

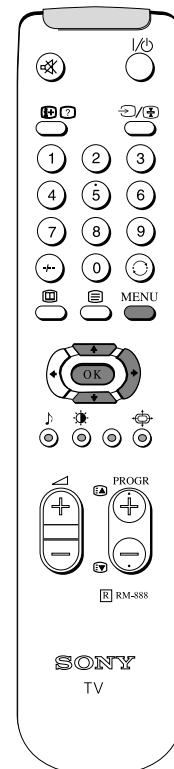
If any digital channels are found during the autotune procedure, no analogue channels will be stored. If some channels that you expect to receive are missing, please refer to the section 'Manually Tuning the TV' on page 23 in this manual to tune in and store the missing channels.



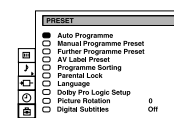
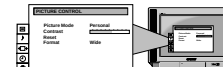
Additional TV Features

Re-arranging the TV channels

After tuning the TV, you can use this feature to change the channel order.



1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the $\blacktriangle$ or $\blacktriangledown$ buttons on the remote control to select the $\square$ symbol on the menu screen then press the $\blacktriangleright$ button to enter the 'PRESET' menu.
3. Press the $\blacktriangledown$ buttons to select 'Programme Sorting' then press the $\blacktriangleright$ button to enter the 'PROGRAMME SORTING' menu.
4. Press the $\blacktriangle$ or $\blacktriangledown$ buttons to select the channel you want to move then press the OK button to confirm.
5. Press the $\blacktriangle$ or $\blacktriangledown$ buttons to select the new programme position (eg PROG 4) for your selected channel then press the OK button to confirm. The selected channel now moves to its new programme position and the other channels move accordingly.
6. Repeat steps 4 and 5 if you wish to sort other channels.
7. Press the MENU button to remove the menu from the TV screen.



PROGRAMME SORTING			
PROG	SYS	CHAN	LABEL
0	I	C 68	----
1	DIG	C 30	BBC ONE Wa
2	DIG	C 30	BBC TWO
3	DIG	C 34	ITV Channel
4	DIG	C 56	SAC
5	DIG	C 56	Channel 5
6	DIG	C 34	ITV 2
7	DIG	C 30	BBC CHOICE
8	DIG	C 34	Channel 4
9	DIG	C 34	Teletext

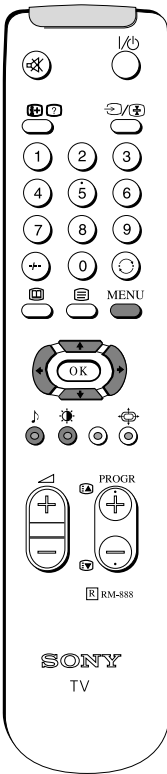
PROGRAMME SORTING			
PROG	SYS	CHAN	LABEL
0	I	C 68	----
1	DIG	C 30	BBC ONE Wa
2	DIG	C 30	BBC TWO
3	DIG	C 34	ITV Channel
4	DIG	C 56	SAC
5	DIG	C 56	Channel 5
6	DIG	C 34	ITV 2
7	DIG	C 30	BBC CHOICE
8	DIG	C 34	Channel 4
9	DIG	C 34	Teletext

PROGRAMME SORTING			
PROG	SYS	CHAN	LABEL
0	I	C 68	----
1	DIG	C 30	BBC ONE Wa
2	DIG	C 30	BBC TWO
3	DIG	C 34	ITV Channel
4	DIG	C 56	SAC
5	DIG	C 56	Channel 5
6	DIG	C 34	ITV 2
7	DIG	C 30	BBC CHOICE
8	DIG	C 34	Channel 4
9	DIG	C 34	Teletext

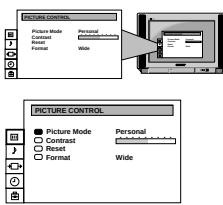
Additional TV Features

Adjusting the picture

Although the picture is adjusted at the factory, you can modify it to suit your own taste.



- 1. Press the MENU button on the remote control to display the menu on the TV screen.
- 2. Press the or buttons on the remote control to select the symbol on the menu screen then press the button to enter the 'PICTURE CONTROL' menu.
- 3. Press the or buttons to select the item on the screen you wish to adjust then press the button to confirm. For a description of the menu items and their effects, see the table below.
- 4. If you selected 'Picture Mode' or 'Format' in step 3, press the or buttons to select the item on the screen you wish to adjust then press the button to confirm.
- 5. Press the or buttons to adjust your selected item.
- 6. As soon as you have adjusted the item, press the OK button to store the new setting.
- 7. If you selected 'Picture Mode' or 'Format' in step 3, press the or buttons to return to the 'PICTURE CONTROL' menu.
- 8. Repeat steps 3-7 to adjust the other items.
- 9. Press the MENU button to remove the menu from the TV screen.



Picture Mode	Picture Mode Personal (for individual settings)
	Movie (for films)
	Live (for live broadcasts)
Brightness*	
Colour*	
Sharpness*	
Hue**	
Contrast	
Reset	Resets picture to factory preset levels
Format	Format (refer to page 14 for details)
	Scroll
	Auto 16:9 Off On

*Only if you select 'Personal' in 'Picture Mode'.
** Available for NTSC colour system only.

Changing picture and sound modes quickly

You can quickly change the Picture Mode or the Sound Effects Mode without entering the 'PICTURE CONTROL' or the 'SOUND CONTROL' menu screens.

- 1. Press the symbol on the remote control for picture modes or the symbol for sound effect modes.
- 2. Press the or buttons to select the desired mode.
- 3. Press the OK button to remove the display from the TV screen.

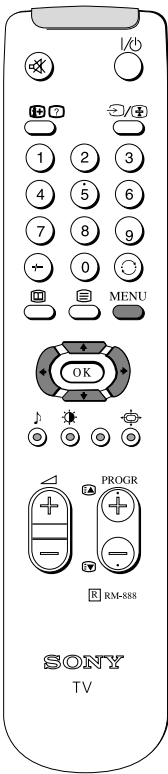
☒ Personal
☐ Movie
☐ Live

☐ Off
☒ Pro Logic
☐ Pseudo stereo
☐ Spatial
☐ Club
☐ Theatre
☐ Hall
☐ Church
☐ Stadium

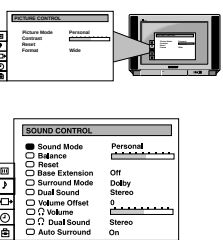
Additional TV Features

Adjusting the sound

Although the sound is adjusted at the factory, you can modify it to suit your own taste.



- 1. Press the MENU button on the remote control to display the menu on the TV screen.
- 2. Press the or buttons on the remote control to select the symbol on the menu screen then press the button to enter the 'SOUND CONTROL' menu.
- 3. Press the or buttons to select the item on the screen you wish to adjust then press the button to confirm. For a description of the menu items and their effects, see the table below.
- 4. If you selected 'Sound Mode' in step 3, press the or buttons to select the item on the screen you wish to adjust then press the button to confirm.
- 5. Press the or buttons to adjust your selected item.
- 6. As soon as you have adjusted the item, press the OK button to store the new setting.
- 7. If you selected 'Sound Mode' in step 3, press the or buttons to return to the 'SOUND CONTROL' menu.
- 8. Repeat steps 3-7 to adjust the other items.
- 9. Press the MENU button to remove the menu from the TV screen.

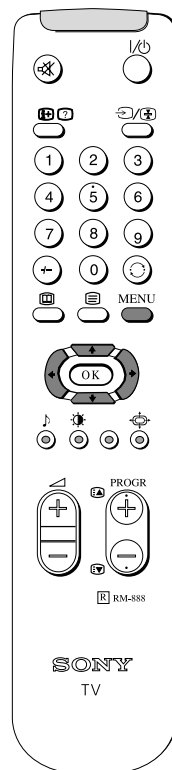


Sound Mode	Personal Rock Jazz Pop
Balance	
Reset	Resets sound to factory preset levels
Base Extension	Boosts base by a fixed amount
Surround Mode	Choose from the special sound effects: Pro Logic --> Pseudo Stereo --> Spatial --> Club --> Theatre --> Hall --> Church --> Stadium --> Off
Dual Sound	Stereo Mono (for a stereo broadcast) A for channel 1 B for channel 2 (for a bilingual broadcast)
Volume Offset	The channel volume level can be adjusted over a range of -12 to +12.
Headphones	Volume
	Dual Sound Stereo Mono (for a stereo broadcast) A for channel 1 B for channel 2 (for a bilingual broadcast)
Auto Surround	Set to 'On' to automatically select Pro Logic Surround sound when transmitted.

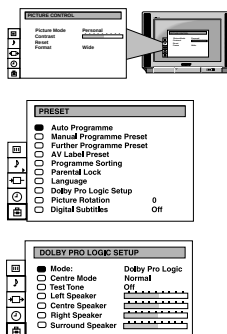
Additional TV Features

Setting Up Dolby Pro Logic

Before listening to Dolby Pro Logic encoded programmes, you can adapt the Dolby features to suit your own taste. Normally this is only required when you install the TV and the speakers, or when changing the speaker positions.



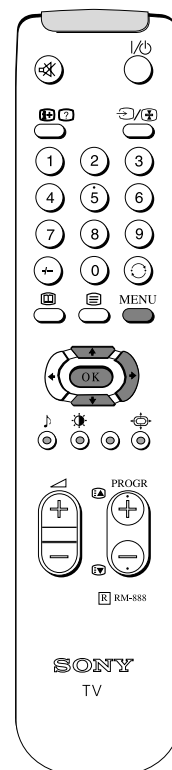
1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the $\downarrow$ button on the remote control to select the  symbol on the menu screen then press the $\rightarrow$ button to enter the 'PRESET' menu.
3. Press the $\downarrow$ button to select 'Dolby Pro Logic Setup' on the menu screen then press the $\rightarrow$ button to enter the 'DOLBY PRO LOGIC SETUP' menu.
4. Press the $\uparrow$ or $\downarrow$ buttons to select 'Mode', then press the $\rightarrow$ button to enter. Press the $\rightarrow$ or $\leftarrow$ buttons to select one of the following modes then press the OK button to store the chosen mode:
Dolby Pro Logic: all 5 speakers are activated
Dolby 3 stereo: surround speakers are not used
5. Press the $\downarrow$ button to select 'Centre Mode', then push the $\rightarrow$ button to enter. Press the $\rightarrow$ or $\leftarrow$ buttons to select one of the following modes then press the OK button to store the chosen mode:
Normal: all 5 speakers are activated
Wide: wider bandwidth for centre speaker
Phantom: centre speaker is not used
6. Press the $\downarrow$ button to select 'Test Tone' then push the $\rightarrow$ button to enter. Press the $\rightarrow$ or $\leftarrow$ buttons to select 'On', then press the OK button.
The test tone will cycle through all the speakers.
7. Press the $\downarrow$ button to select the 'Left Speaker', then press the $\rightarrow$ button to confirm. The tone remains at the left speaker.
8. Press the $\uparrow$ or $\downarrow$ buttons to alter the sound level, then press the OK button.
9. Repeat steps 7 and 8 to select and adjust the 'Centre', 'Right', and 'Surround' speakers, so that the sound output from all speakers are balanced in relation to your sitting position.
10. Press the MENU button to remove the display from the TV screen.



Additional TV Features

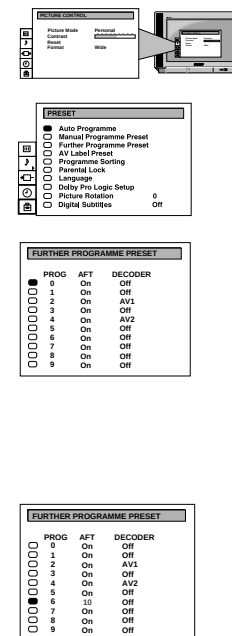
Using the further programme preset feature

With this feature you can a) manually fine-tune the TV to obtain a better picture reception if the picture is distorted or b) preset the AV output for the programme positions of channels with scrambled signals (eg from a pay TV decoder). In this way a connected VCR records the unscrambled signal.



1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the $\downarrow$ button to select the  symbol on the menu screen then press the $\rightarrow$ button to enter the 'PRESET' menu.
3. Press the $\downarrow$ button to select 'Further Programme Preset' then press the $\rightarrow$ button to enter the 'FURTHER PROGRAMME PRESET' menu.
4. Press the $\uparrow$ or $\downarrow$ buttons to select the relevant programme number then press the $\rightarrow$ button repeatedly to select a) AFT or b) DECODER. The selected item changes colour.
Note: AFT will only be available on analogue channels.
5. a) **AFT**
Press the $\uparrow$ or $\downarrow$ buttons to fine tune the channel frequency over a range of -15 to +15. Press the OK button to confirm. Repeat steps 4 and 5a if you wish to fine tune other channels.

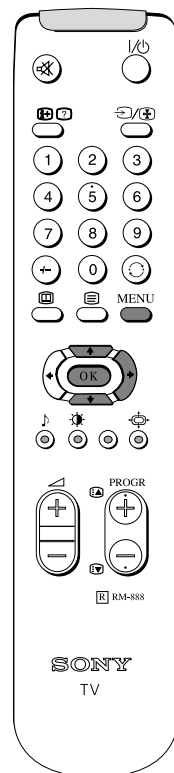
b) **DECODER**
Press the $\uparrow$ or $\downarrow$ buttons to select AV1, AV2 or AV3 for the programme position and press the OK button to confirm. You can now attach a decoder to the AV1, AV2 or the AV3 socket on the back of the TV and the picture from that decoder will appear on this programme number. Repeat steps 4 and 5b to preset the AV output for other programme positions.
6. Press the MENU button to remove the menu from the TV screen.



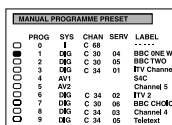
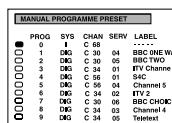
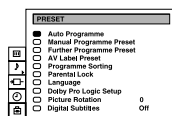
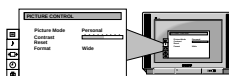
Additional TV Features

Manually tuning the TV

You have already tuned the TV automatically using the instructions at the start of this manual. You can however carry out this operation manually, adding channels to the TV, one at a time.



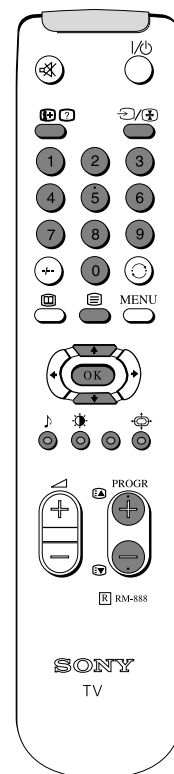
1. Press the MENU button on the remote control to display the menu on the TV screen.
2. Press the button to select the symbol on the TV screen then press the button to enter the PRESET menu.
3. Press the button to select 'Manual Programme Preset' on the menu screen then press the button to enter the 'MANUAL PROGRAMME PRESET' menu.
4. Press the or buttons to select a programme number for your channel (eg PROGR 1 for BBC1) then press the button to enter.
5. Press the or buttons to select the TV broadcast system (I for analogue or DIG for digital) or a video input source (AV1, AV2 ...) then press the button to confirm.
6. Select the first number digit of 'CHAN' (channel) then the second number digit of 'CHAN' with the number buttons on the remote control
or
Press the or buttons to search for the next available channel.
7. If you do not wish to store this channel on the programme number you selected, press the or buttons on the remote control to continue searching for the desired channel.
8. If this is the channel you wish to store, press the OK button.
9. Repeat steps 4-8 if you wish to store more channels then press the MENU button to remove the menu from the TV screen.



Additional TV Features

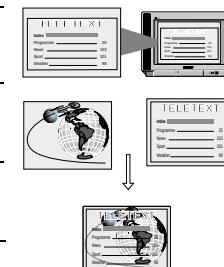
Viewing Standard Teletext

Teletext is an information service transmitted by most TV stations.



Selecting Teletext

1. When viewing analogue channels press a numbered button on the remote control to select the channel which carries the teletext service you wish to receive.
2. Press the on the remote control to switch on teletext. Press the button again if you wish to superimpose teletext on to the TV screen.
3. Select your required page using the numbered buttons on the remote control. If you make an error, complete the number, then reenter the correct page number.



Using Other Standard Teletext Functions

To move to the next or preceding page

Press the or buttons to select the previous or next page.

To freeze a Teletext page

Press the button to freeze the page. Press again to cancel the freeze.

Revealing concealed information (eg: answers to a quiz).

Press the button to reveal information. Press again to conceal the information.

Using colour buttons to access pages (Fastext)

When the colour coded menu appears at the bottom of a page, press the colour buttons (red, green, yellow or blue) on the control to access the corresponding page.

Displaying TOP-Text (when available)

With TOP-Text you can access pages easily by selecting blocks or groups of pages. The block is a category (for example Sports) which includes the groups (for example Football). When TOP-Text is broadcast, a colour coded menu appears at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons on the remote control. Press these coloured buttons to displayed the desired pages.

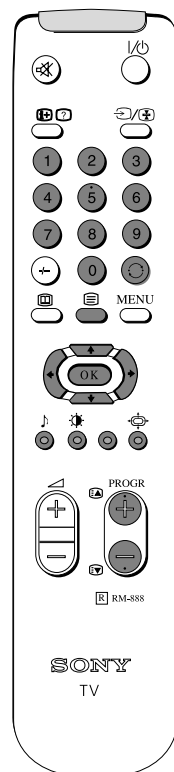
1. Press the button to display teletext.
2. Press the coloured buttons to search for the page you desire:
Red: to go back to the previous page
Green: to proceed to the next page.
Yellow: to proceed to the first page of the next group.
Blue: to proceed to the first page of the next block.

Press the button twice to return to normal TV.

Additional TV Features

Viewing Digital Teletext

Most of the digital TV channels broadcast information via teletext. This digital service includes high quality text and graphics as well as advanced navigational options. Additionally, this television set has access to a dedicated digital teletext channel.



Selecting the dedicated digital teletext channel

1. To view the dedicated digital teletext service, press the numbered buttons on your remote control to select the relevant channel number. If you do not know the channel number, press the OK button to look for this channel in the channel table.
2. Once the teletext channel is displayed, follow the instructions on-screen to display the teletext information, then press the **▲**, **▼**, **◀** or **▶** buttons to guide the on-screen cursor to the required area of the screen then press the OK button to display the chosen information.
3. Alternatively, you can use the number and colour buttons on the remote control to directly enter the page number required and to display the various pages of text information.
4. If when viewing the teletext pages, you are requested to select 'OK' or 'Cancel', press the OK button for 'OK' or the **○** button for 'Cancel'.
5. When you have finished viewing teletext, press the **□** button or the PROG +/- buttons, and then select an alternative digital channel.

Selecting teletext from the other digital channels

Normal teletext services may also be available on other digital channels. Sometimes this is indicated by a small symbol or text display on your TV screen, superimposed on the channel you are watching.

1. Press the **▲**, **▼**, **◀** or **▶** buttons to select the symbol then press the OK button to display the chosen information.
2. Alternatively, you may be requested to use the number and colour buttons on your remote control to display the various pages of text information. If when viewing the teletext pages, you are requested to select 'OK' or 'Cancel', press the OK button for 'OK' or the **○** button for 'Cancel'.
3. Once the text information is displayed on screen, use the **▲**, **▼**, **◀** or **▶** buttons, the colour buttons and/or the number buttons to access the chosen information.
4. When you have finished viewing teletext, press the **□** button and then select an alternative digital channel.

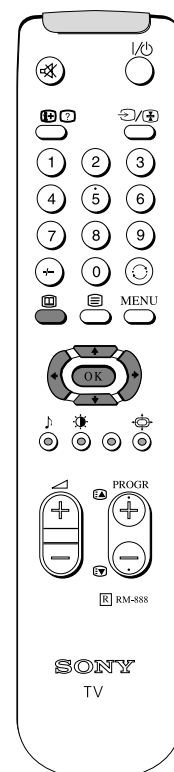
On other channels there may be no on-screen symbol, but you can see if there is a digital service as follows:

1. When watching a digital TV channel, press the **□** button on your remote control to display any text service which may be available.
2. Press the number buttons to select the various pages of information available and/or the colour buttons for the functions shown on screen.
3. When you have finished using the text service, press the **□** button to return to normal TV.

Additional TV Features

Electronic Programme Guide (EPG)

The Electronic Programme Guide (EPG) is a guide which provides programme information for all digital channels supporting EPG.



Displaying the EPG

1. Press the **□** button on the remote control to display the programme guide on the TV screen. You may see the message 'EPG INFORMATION IS TEMPORARILY UNAVAILABLE' whilst waiting for the EPG to appear on screen.
2. Press the **▲**, **▼**, **◀** or **▶** buttons on the remote control to move the on-screen cursor around the guide.
3. Press the **□** button again to remove the programme guide from the TV screen.

Viewing Information on the EPG

You can alter the type of information presented on the EPG by changing data in each of the EPG columns. You can for example display information for all sports programmes being shown tomorrow from 5.00pm onwards.

1. Press the **□** button on the remote control to display the EPG on the TV screen.
2. Press the **◀** or **▶** buttons to highlight the 'date' column then press the **▲** or **▼** buttons to select your chosen date.
3. Press the **◀** or **▶** buttons to highlight the 'time' column then press the **▲** or **▼** button to select your chosen time.
4. Press the **▶** button or press the OK button. The EPG will display programme information according to the date and time you selected.
5. Press the **▶** button to highlight the 'programme type' column then press the **▲** or **▼** button to select **News**, **Films**, **Sport**, **Entertainment**, **Lifestyle**, **Education** or **Childrens Programmes**.
6. Press the **◀** or **▶** buttons or press the OK button to update the programme information accordingly. If you selected tomorrow's date, 17:00 and **Sport**, you should now be able to view all the sports programmes being shown tomorrow from 5.00 pm onwards.
7. Press the **□** button on the remote control to remove the EPG from the TV screen.

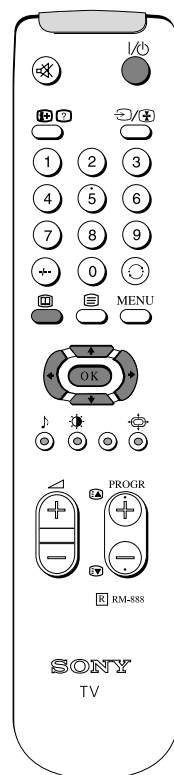
Two 22 DBC 13.05.03 Press OK to view data for all available channels Press to return to programme list

CH	EPG	Channel	Programme	Date	Time	Genre
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12

Two 22 DBC 13.05.03 Press OK to view data for all available channels Press to return to programme list

CH	EPG	Channel	Programme	Date	Time	Genre
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12

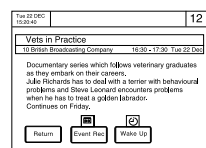
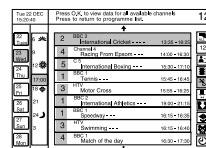
Electronic Programme Guide (EPG)



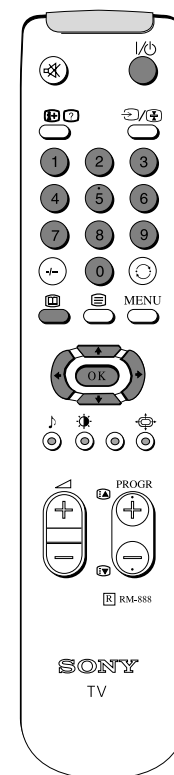
Recording Programmes

- 1 Press the button on the remote control to display the EPG on the TV screen.
- 2 Press the or buttons to highlight the 'programme' column then press the or button to select your desired programme.
- 3 Press the OK button. If the programme is currently being broadcast, it will be displayed on your TV. If not, the 'TIMER' menu will be displayed on the TV screen.
- 4 At the bottom of the timer page you can see the symbols (back to EPG), (to record a programme) or (to set the programme to switch on automatically).
- 5 Press the or buttons to select one of these symbols then press the OK button to confirm your selection. The EPG appears on screen with the relevant icon appearing next to the programme you selected in step 2.
- 6 If you wish to cancel a recording, select the relevant programme and press the OK button. A menu is displayed on screen requesting you to select 'Return' if you wish to continue to record the programme or 'Delete' if you wish to cancel the recording request.
- 7 After making your selection, press the OK button to confirm. The record icon disappears from the EPG if 'Delete' was selected in step 6.
- 8 If you have finished viewing programmes on your TV, press the button before the timer recording starts to leave your TV in standby mode for the timer settings to be activated. If, however, you wish to continue watching other programmes after setting the timer, you can do so by changing programmes in the normal way. If you are watching another programme when the timer is due to start, a display will appear on screen advising you that, if you change channels, you automatically cancel the recording.
- 9 If you do not wish to cancel or view the recording, press the button whilst one of the displays are still on screen to leave your TV in standby mode. The standby indicator on the front of the TV will flash to show that the timer record operation is active. If, however, you choose to change programmes, you automatically cancel the recording.

Notes: If your video recorder (VCR) is not Smartlink-compatible, you will need to set your VCR to switch on and off automatically after setting the timer on the EPG. If you want to change channel once a digital programme has started recording, select the channel by using the remote control buttons as normal. The message 'STOP RECORDING' will be displayed on screen. Either do nothing to allow the recording to continue or select the required channel once more while the message is still displayed on screen. The recording will then be cancelled.

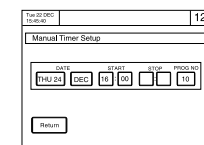
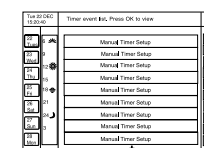
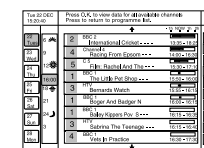


Electronic Programme Guide (EPG)



Setting The Manual Timer

- 1 Press the button on the remote control to display the EPG on the TV screen.
- 2 Press the or button to highlight the 'programme type' column then press the button to select the timer symbol .
- 3 Press the OK button to display a screen of 9 programme slots, each one indicating that it is either free for programming, or that it has a programme already stored in it.
- 4 Press the button to enter the 'programme' column.
- 5 Press the or button to select a free row then press the OK button to display the Set Timer screen. This screen asks you to confirm the date, programme number, start time and end time.
- 6 Press the button to select the date area then press the number buttons on the remote control to enter the date.
- 7 Press the button to confirm the date then press the or button to select the month.
- 8 Press the button to confirm the month and to enter the start time.
- 9 Press the number buttons to enter the time when you want the timer to switch on, preferably several minutes before you set your video recorder to start recording. If you wish to switch on at 8.25 pm, enter 2025.
- 10 Press the button to confirm the entry and to enter the switch-off time.
- 11 Press the number buttons to enter the time you want the timer to switch off, preferably after your video has stopped recording. Again, you should enter 4 digits using the 24 hour format.
- 12 Press the button to confirm the entry and to enter the programme number.
- 13 Press the OK button to save the settings then select and press OK button to return to the Manual Timer Setup menu.
- 14 Select another available slot if you wish to record a further programme. Otherwise, press the button to enter the 'programme type' column then press the OK button to return to the EPG.
- 15 If you have finished viewing programmes on your TV, press the button before the timer recording starts to leave your TV in standby mode for the timer settings to be activated. If, however, you wish to continue watching other programmes after setting a timer, you can do so by changing programmes in the normal way. If you are watching another programme when the timer is due to start a display will appear on screen advising you that, if you change channels now, you automatically cancel the recording.
- 16 If you do not wish to cancel or view the recording, press the button whilst the display is still on screen to leave your TV in standby mode. The standby indicator on the front of the TV will flash to show that the timer record operation is active. If, however, you choose to change programmes, you automatically cancel the recording.



Additional Information

Specifications

TV system
I/DVB-T

Colour system
PAL
NTSC 3.58, 4.43 (only Video In)

Channel coverage
UHF:B21-B69

Picture tube
KV-28DS20U
FD Trinitron WIDE
Approx 71cm (28inches) (Approx 66cm picture measured diagonally), 102° deflection
KV-32DS20U
FD Trinitron WIDE
Approx 82cm (32 inches) (Approx 76cm picture measured diagonally), 102° deflection

Rear Terminals

- 1 21-pin Euro connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output.
- 2 21-pin Euro connector (CENELEC standard) including audio/video input, S-video input, selectable audio/video output.
- 3 21-pin Euro connector (CENELEC standard) including audio/video input, Monitor audio/video output.
- Audio outputs - phono jacks
- Modem connection

Front Terminals

- 2 Video input -phono jack
- 2 Audio inputs - phono jacks
- S video input - 4 pin DIN
- Headphones jack - minijack stereo

Sound output

- Left/Right: 2x20W (music power)
- Centre: 10W (music power)
- Sub woofer: 20W (music power)
- Surround 2x5W (music power)

Power consumption

- KV-28DS20U: 222W
- KV-32DS20U: 209W

Dimensions (wxhxd)

- KV-28DS20U: Approx. 761x496x525mm
- KV-32DS20U: Approx. 874x563x571mm

Weight

- KV-28DS20U: Approx. 44.0kg
- KV-32DS20U: Approx. 62.0kg

Accessories supplied

- RM-B88 remote control (1)
- IEC designated size AA battery (2)
- Surround Speakers (2) Centre Speaker (1)

Other features

- Teletext
- Dolby ProLogic Surround System
- Smartlink

Design and specifications are subject to change without notice.

Additional Information

Troubleshooting

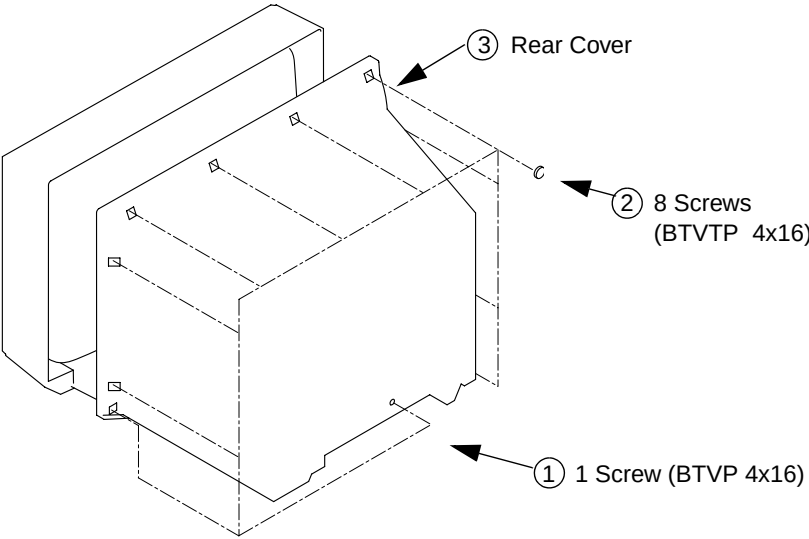
Here are some simple solutions to problems which may affect the picture and sound.

Problem	Cause
No picture , no sound	- Power off. - TV in standby. - Aerial disconnected
Poor or no picture (screen is dark), but good sound. No picture on any channel after digital tuning.	- Picture preset level adjustment. - No digital transmissions in your area. - No digital transmissions from the transmitter you are currently using. - Weak signal. - Unsuitable aerial
Some channels are blank.	- Scrambled/subscription-only channel. - Programme used only for data (no picture or sound). - Programme not being transmitted. - Digital mode Timer Record active (regular flash). - Fault (irregular flash).
Standby indicator flashing.	- Volume control - Wrong external mode selected on an RGB video source.
Good Picture, no sound. Poor picture quality No colour on colour programmes. Remote control does not function. Distorted picture when changing programmes or selecting Teletext.	- Colour level setting. - Batteries low. - Inputs from external equipment not switched off.
Cause	Solution
Power off. TV in standby.	- Plug in the TV. - Press the 1 button on the front of the TV - If the 1 indicator is on press the 1/0 button or a numbered button on the remote control.
Aerial disconnected	Check the aerial connection.
Picture level adjustment	Select 111 on the TV menu system then adjust the brightness, picture and colour balance levels
No digital transmissions in your area.	Tune in the analogue channels available using the 'Manually tuning the TV' instruction in this manual, then contact a local installer to find out when digital transmissions begin in your area.
No digital transmissions from the transmitter you are currently using. Unsuitable aerial.	- Contact a local installer to find out which transmitter you should be pointing your aerial at. - Change your aerial to to cover the channels used by digital programmes (Contact a local installer)
Weak signal.	- Ensure aerial is correctly aligned to transmitter. - Ensure aerial is plugged directly into the TV (not through other equipment). - Upgrade to a higher gain aerial.
Scrambled/subscription-only channel. Programme information without picture or sound.	- Subscribe to pay-per-view broadcaster. - See 'Skipping programme positions' section. - See 'Re-arranging the TV channels' section.
Fault.	- Do not open the cabinet, refer to qualified person. - Contact your nearest Sony Service Centre.
Volume control.	Press the 1/2 + button on the remote control.
Wrong external mode selected.	If 111 is displayed on the screen, press the 111 button on the remote control.
Colour level setting.	- Press the 111 button repeatedly until the RGB symbol 111 is displayed on screen. - Select 111 on the TV menu system then adjust the color setting

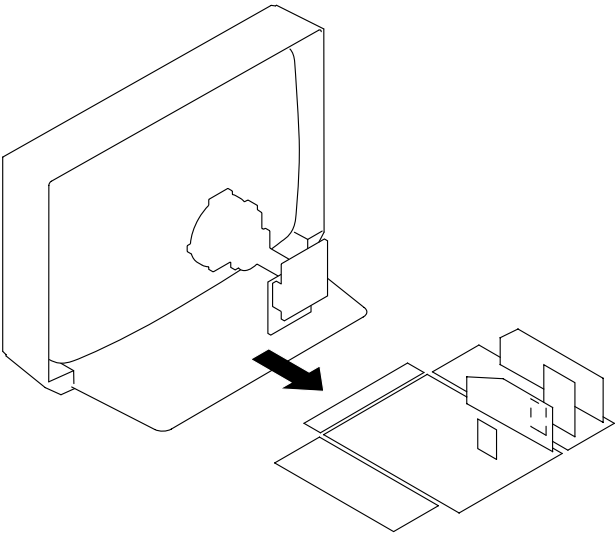
- If you continue to have these problems, have your TV serviced by qualified personnel or you can contact the Sony UK Digital HelpLine on 0870 600 1717.
- NEVER open the casing yourself.

SECTION 2 DISASSEMBLY

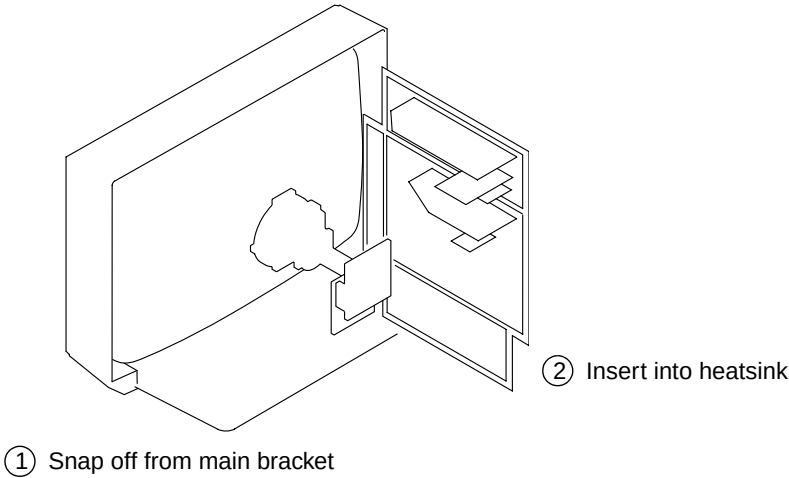
2-1. REAR COVER REMOVAL



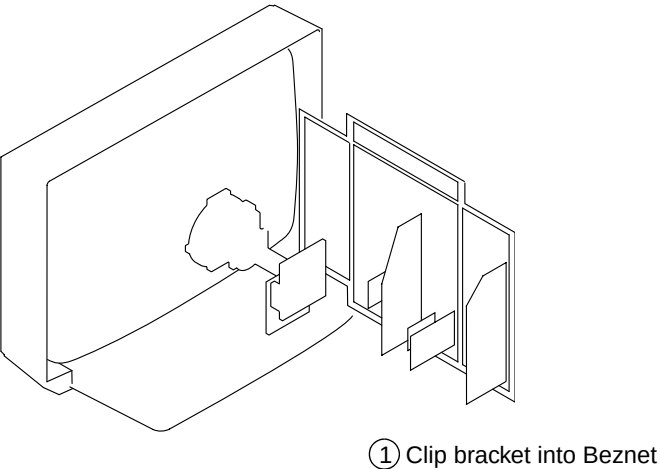
2-2. CHASSIS ASSY REMOVAL



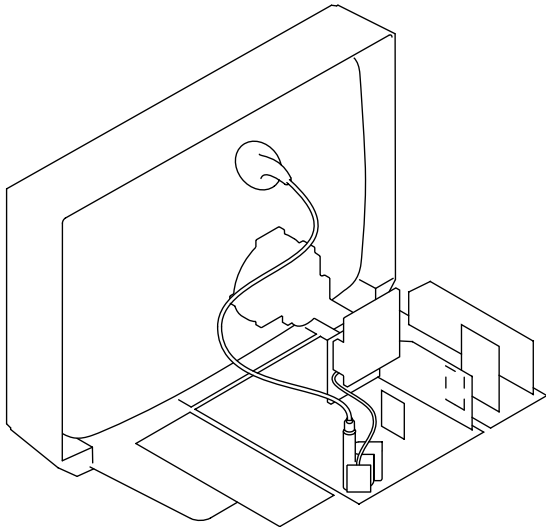
2-3-1. SERVICE POSITION (1)



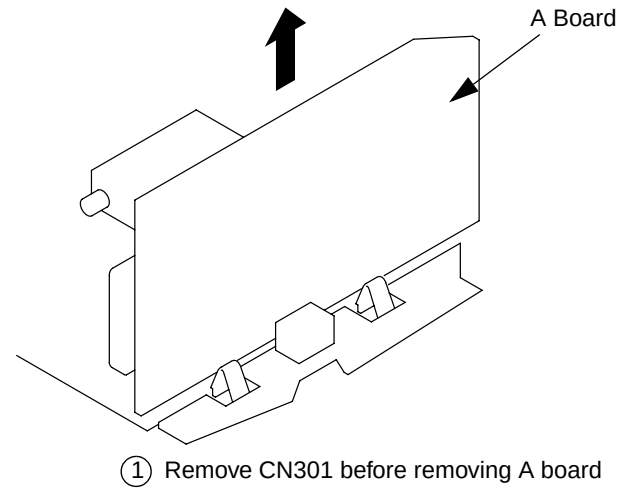
2-3-2. SERVICE POSITION (2)



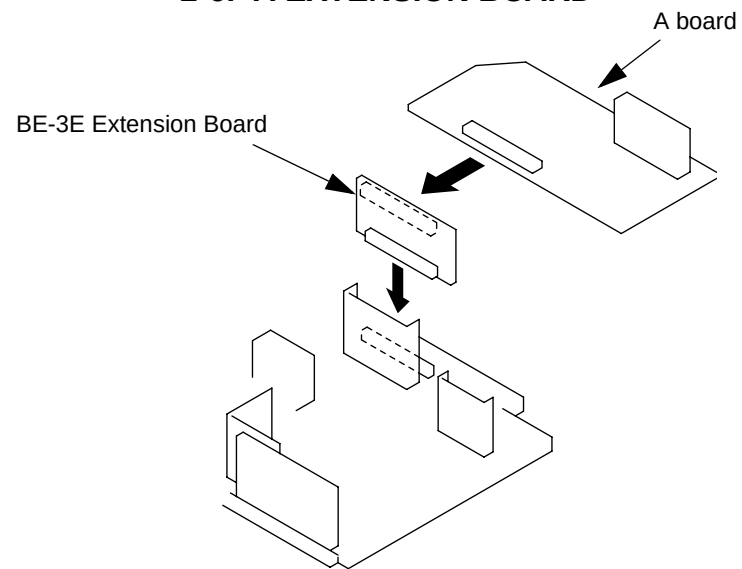
2-4. WIRE DRESSING



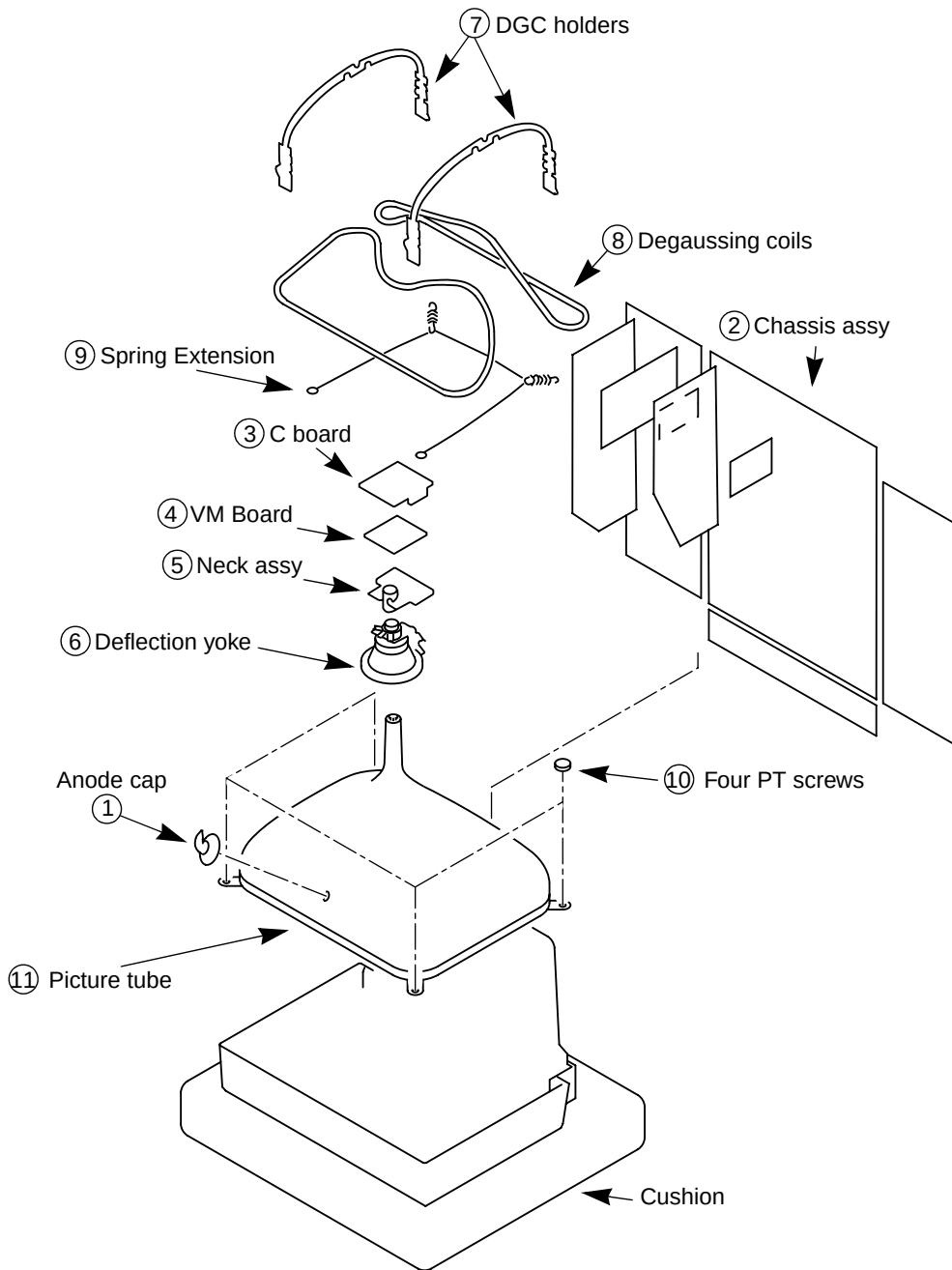
2-5. A BOARD REMOVAL



2-6. A EXTENSION BOARD



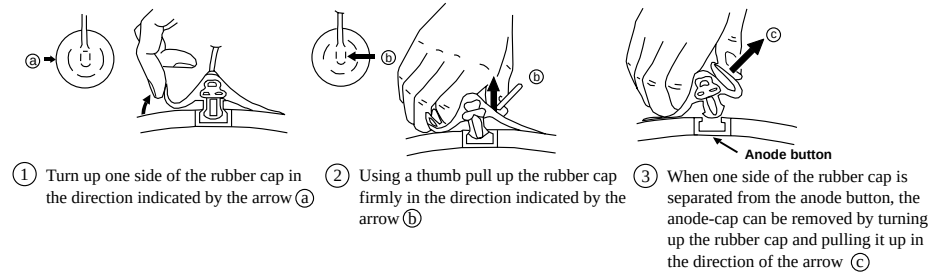
2-7. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

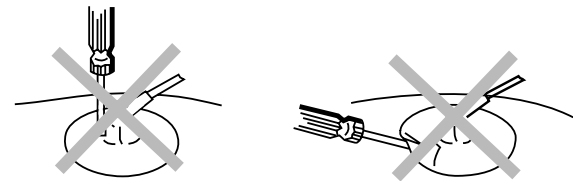
Note : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

* REMOVING PROCEDURES.



• HOW TO HANDLE THE ANODE-CAP

- ① To prevent damaging the surface of the anode-cap do not use sharp materials.
- ② Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
- ③ A metal fitting called a shatter hook terminal is fitted inside the rubber cap. Do not turn the rubber foot over excessively this may cause damage if the shatter hook sticks out.



REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the D Board printed wiring board, the bottom plates fitted to the main chassis bracket require to be removed.

This is performed by cutting the gates with a sharp wire cutter at the locations indicated by arrows.

Note : There are 4 plates fitted to the main bracket and secured by 6 gates.
Only remove the necessary plate to gain access to the printed wiring board.

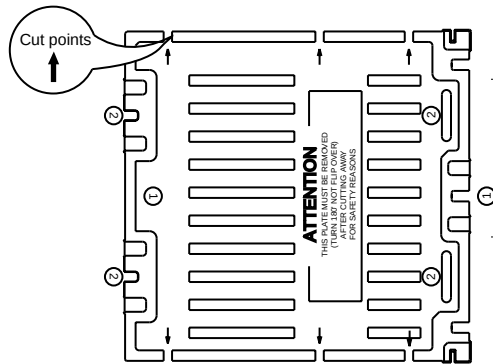


Fig 1



For safety reasons, on no account should the plates be removed and not refitted after servicing.

(2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.

The plates are identified by numerical markings on their top side e.g. 1,2

1. Identify the plate by locating its marking.
2. Rotate the plate through 180° (do not flip over).
3. Locate the corresponding numerical markings indicated on the main chassis. See Fig 2.
4. Refit the plate as indicated in Fig 3 with the markings located next to each other.

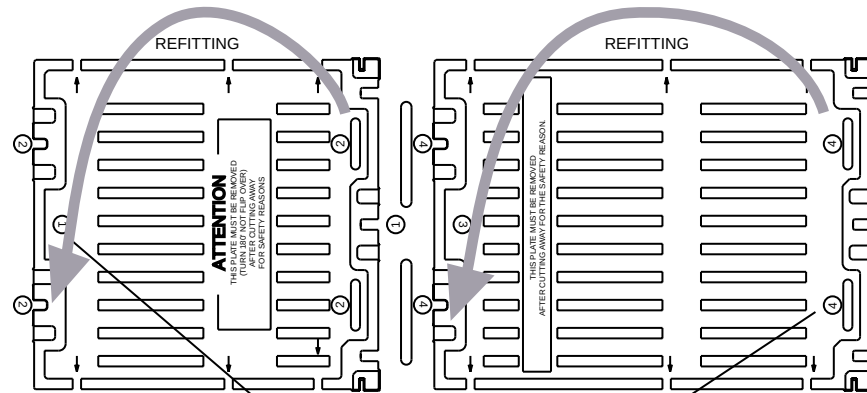


Fig 2

NUMERICAL MARKINGS

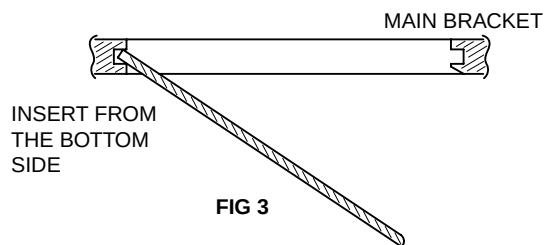


FIG 3

In the event of the plates requiring to be removed at a later stage, this can be achieved by inserting a screwdriver in the snap-recess indicated as in Fig 4 and lifting out.

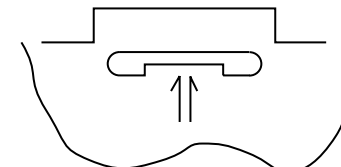


Fig 4

SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings:

Contrast normal

Brightness normal

Carry out the following adjustments in this order:

- 3-1. Beam Landing
- 3-2. Convergence
- 3-3. Focus
- 3-4. White balance

Note: Test equipment required

1. Color bar/pattern generator.
2. Degausser.
3. Digital multimeter.
4. Oscilloscope.

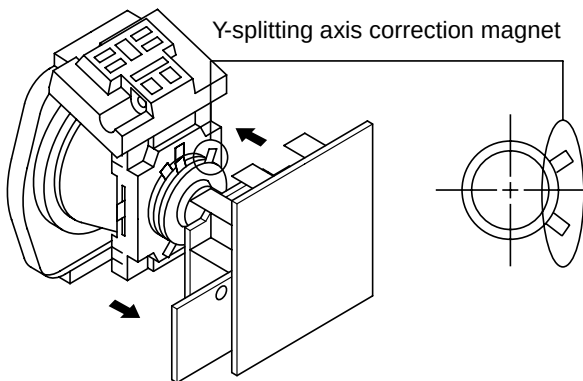
3-1. BEAM LANDING

Preparation:

- In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
- Switch on the set's power and degauss with the degausser.

(1) Adjustment of Correction Magnet for Y-Splitting Axis

- Input a crosshatch signal from the pattern generator.
- Set the Picture control to minimum and confirm that the Brightness control is set to normal.
- Position the neck assembly as indicated in Fig.3-2.
- Move the deflection yoke as far forward as is possible.
- Adjust the upper and lower pin symmetrically by opening or closing the Y-splitting axis correction magnets located on the neck assembly.
- Return the deflection yoke to its original position.



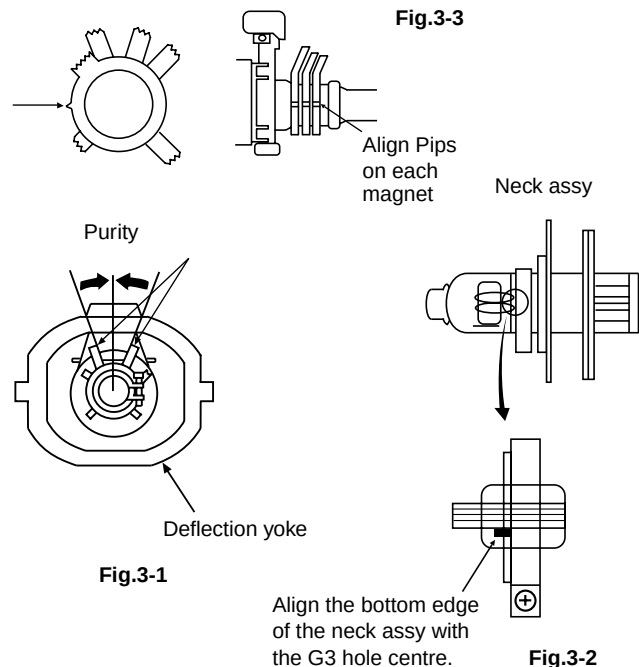
Caution :

High voltages are present on the Deflection yoke terminals - take care when handling the Deflection yoke whilst carrying out adjustments.

(2) Landing

Note : Before carrying out the following adjustments adjust the magnets as indicated below [See Fig.3-3].

- Input an all-white signal from the pattern generator. Maximize the picture setting and adjust the Brightness setting.
- Rough-adjust the focus and horizontal convergence.
- Loosen the deflection yoke screws and align the purity adjustment knob to its central position. [See Fig.3-1].
- Switch from the all-white pattern to an all-green pattern.
- Move the deflection yoke backwards and adjust with the purity magnet so that the green is at the centre and it aligns symmetrically. [See Fig.3-4].
- Move the deflection yoke forward and adjust so that the entire screen becomes green.
- Switch the raster signal to red, then to blue and verify the landing condition.
- When the position of the deflection yoke has been determined, fasten the deflection yoke with the screw.
- If the beam does not land correctly in all the corners of the screen, use magnets to correct it. [See Fig.3-5].



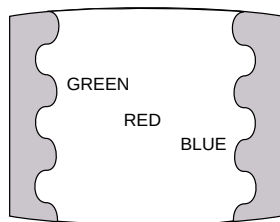


Fig.3-4

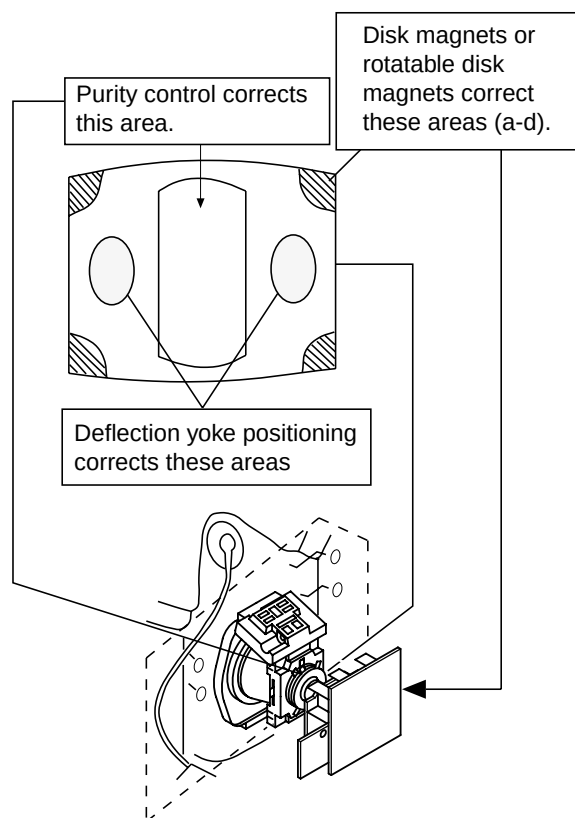
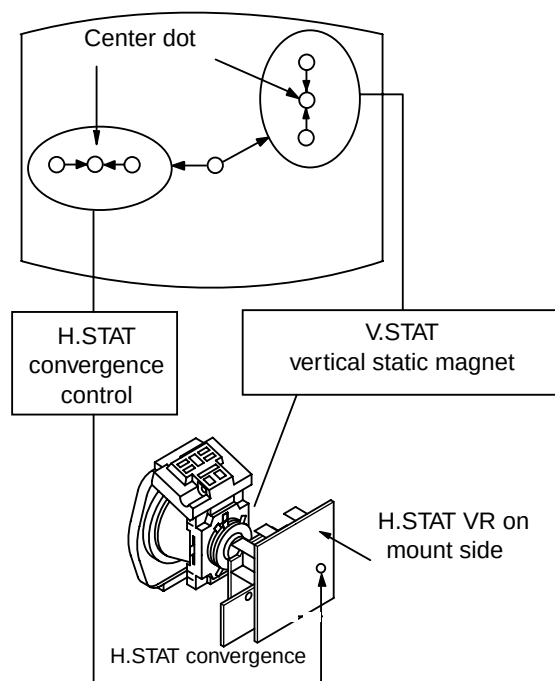


Fig. 3-5

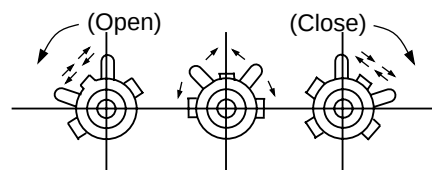
3-2. CONVERGENCE

(1) Screen centre convergence [Static convergence]

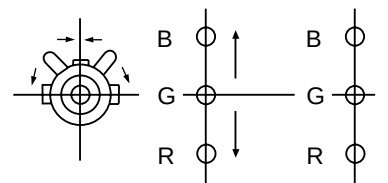
1. Input a dot signal from the pattern generator.
Normalize the picture setting.
2. [Moving horizontally], adjust the H.STAT control so that the horizontal red, green and blue dots coincide at the centre of the screen.
3. [Moving vertically], adjust the V.STAT magnet so that the vertical red, green and blue dots coincide at the centre of the screen.



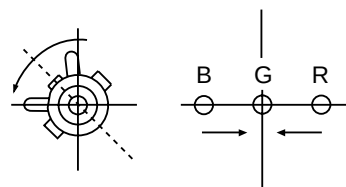
- If the horizontal dots are unable to coincide with the variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.
[Adjust the convergence by tilting the V.STAT convergence or by opening and closing the V.STAT convergence.]



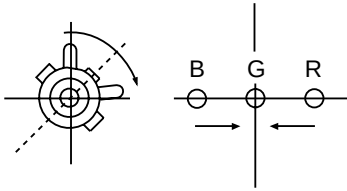
4. Movement of the red, green and blue dots by tilting the V.STAT magnet and by opening or closing the V.STAT magnet.
- a). By opening or closing the V.STAT magnet, the red, green and blue dots move as indicated below.



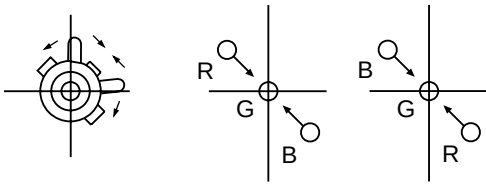
- b). By rotating the V.STAT magnet counter clockwise, the red, green and blue dots move as indicated below.



- c). By rotating the V.STAT magnet clockwise, the red, green and blue dots move in the direction indicated below.



- d). By opening or closing the V.STAT magnet, the red, green and blue dots move in the direction indicated below.

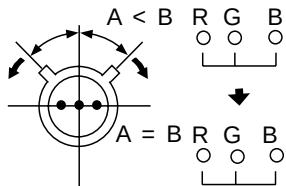


Note : If the blue dot does not coincide with the red and green points correct the points by using the BMC [Hexapole] magnet.

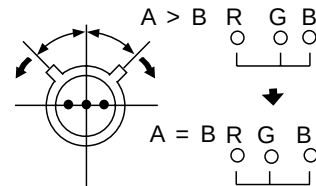
5. Correction for HMC [horizontal mis-convergence] and VMC [vertical mis-convergence] by using the BMC [Hexapole] magnet.

- a). HMC correction by BMC [Hexapole] magnet and movement of the electron beam.

HMC correction(A)

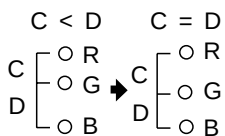
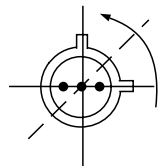


HMC correction(B)

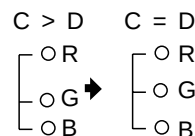
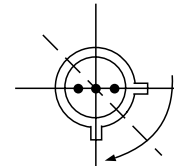


- b). VMC correction by BMC [Hexapole] magnet and movement of the electron beam.

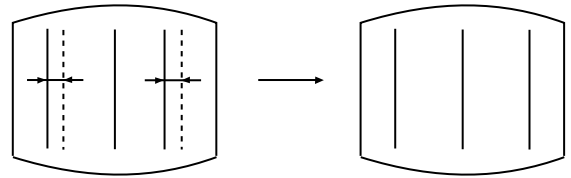
VMC correction(A)



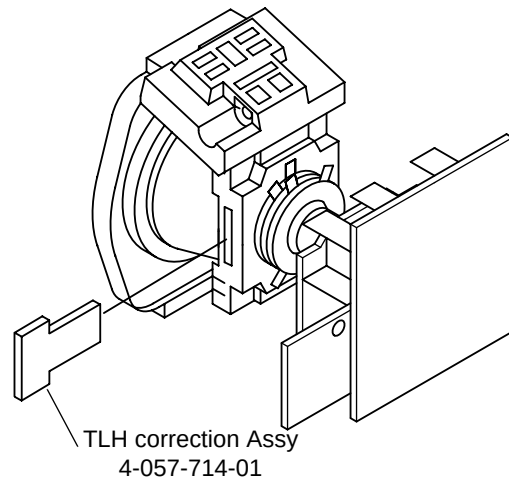
VMC correction(B)



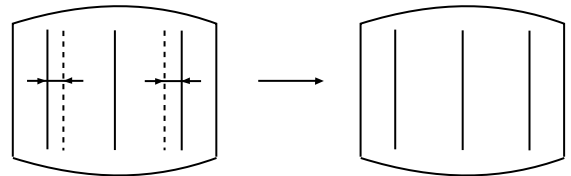
HAMP



6. HTIL correction can be performed by adding a THL correction ASSY to the DY.



HTIL



LAYOUT OF EACH CONTROL

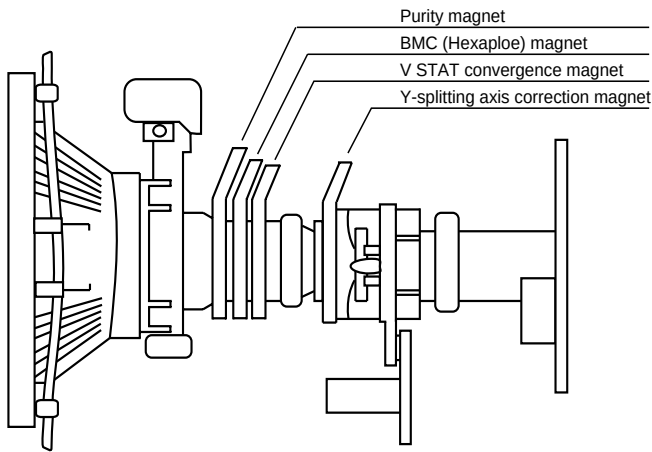
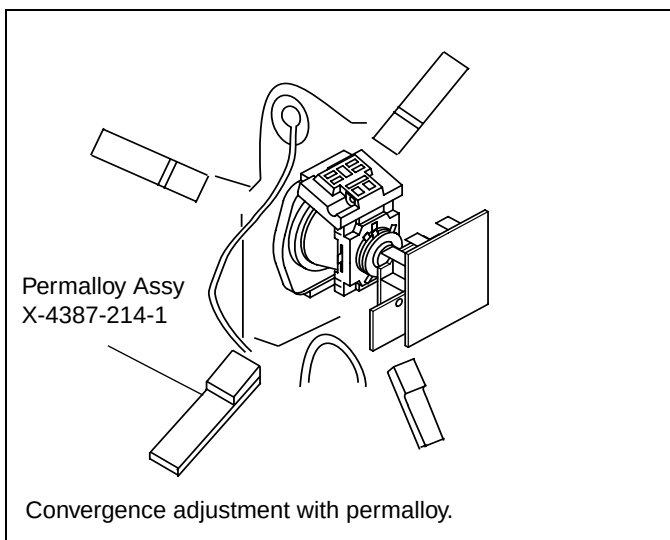
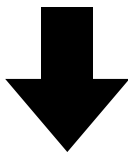
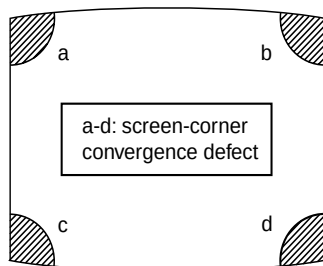


Fig 3-6

Note : If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloys.



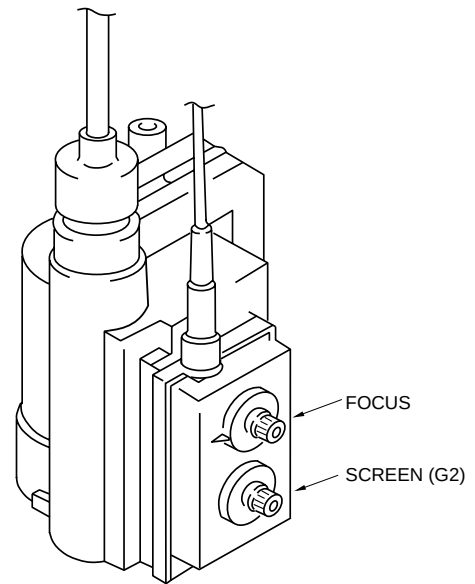
3-3. SCREEN (G2)

SCREEN G2 ADJUSTMENT

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 175V DC from an external power supply to the R, G and B cathodes of the CRT.
4. Whilst watching the picture, adjust [SCREEN G2] located on the FBT [flyback transformer] to the point just before the flyback return lines disappear.

3-4. FOCUS

1. Receive a television broadcast signal.
2. Normalise the picture setting.
3. Adjust the focus control located on the FBT [flyback transformer] to obtain the best focus at the centre of the screen. Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



3-5. WHITE BALANCE

WHITE BALANCE ADJUSTMENT

1. Input an all white signal from the pattern generator.
2. Enter into the Service Mode.
3. Enter into the 'Picture Adjustment' service menu.
4. Select 'Sub contrast' and adjust to 7.
5. Select the 'Green drive' and adjust so that the white balance becomes optimum.
6. Select the 'Blue drive' and adjust so that the white balance becomes optimum.
7. Press the 'TV' button on the remote commander to return to TV operation.

PICTURE ADJUSTMENT	
AFC mode	1
REF position	2
SCP BGR	1
SCP BGF	1
Trap fo	0
Sub contrast	Adj
Sub colour	Adj
Sub brightness	Adj
Sub hue	Adj
Green drive	Adj
Blue drive	Adj
Green cutoff	Adj
Blue cutoff	Adj
Gamma	0
Pre / overshoot	3
Y delay	3

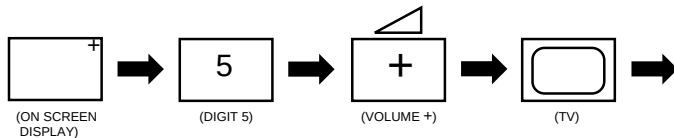
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustments to this model can be performed using the supplied Remote Commander RM-888.

HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch and enter into the stand-by mode.
2. Press the following sequence of buttons on the Remote Commander.



- 'TT--' will appear in the upper right corner of the screen. Other status information will also be displayed.
3. Press 'MENU' on the remote commander to obtain the following menu on the screen.

TEST MENU
> Picture Adjustment
Geometry
Wide
IC status
MSP
Dynamic Convergence
Current TV status

4. Move to the corresponding adjustment using the button on the remote commander.
5. Press the + button to enter the selected adjustment.
6. Turn off the power to quit the service mode when adjustments have been completed.

PICTURE ADJUSTMENT

AFC mode	1
REF position	3
SCP BGR	1
SCP BGF	1
Trap fo	9
Sub contrast	Adj
Sub colour	Adj
Sub brightness	Adj
Green drive	Adj
Blue drive	Adj
Green cutoff	Adj
Blue cutoff	Adj
Gamma	0
Pre / overshoot	0
Y delay	3
D Pic	ON/OFF
D Colour	ON/OFF
DC Transfer	ON/OFF

GEOMETRY ADJUSTMENT - 4:3

V size	Adj
V position	Adj
S Correction	Adj
V Linearity	Adj
H size	Adj
H position	Adj
Pin Amp	Adj
Pin Phase	Adj
AFC Bow	Adj
AFC Angle	Adj
EHT V	1
EHT H	0
Lo Corn Pin	Adj
Up Corn Pin	Adj

WIDE ADJUSTMENT - 4:3

V Aspect	0
V Scroll	25
Upper V Lin	0
Lower V Lin	0
Left Blanking	1
Right Blanking	11

MSP

AGC ON/OFF	ON
Constant gain CDB	0
FM prescale FMP	36
Zwei mono-st WHI	36
Zwei st-mono WLO	18
Zwei mono-bi WMH	36
Zwei bi-mono WLO	18
Time Zwei WML	41
Fawct limit	10
Fawct soll init FAW	12
Fawer tol	2
Nicam Err Max CCT	10
Nicam Err Min	0
Nicam Prescale NIP	97
Time Nicam	31
Carrier mute CRM	OFF
Audio clock ACO	HIZ
Scart prescale	25
Scart volume	64

IC STATUS (CXA2076 / CXA2040)

CXA2076	
H lock	1
IKR	1
VNG	0
X-RAY	0
Colour system	3
CV1 sync	1
CXA2040	
Sync sep	1
S1 mode pin	01
S2 mode pin	01
TUNER	
Tuner status	01101011

TV STATUS BE3E

Text system	C TEXT/C TEXT 2
Dolby	NO-FX,DX / YES-DS
DSP Present	NO-FX,DX / YES-DS
Text language set	WEST/EAST/RUSSIAN
Menu language set	WEST/EAST/RUSSIAN
Destination	B/D/U/K/L/E/A/R
Ageing	OFF/ON
Auto Shut Off	OFF/ON
Size	28/32
Colour trap sw	SECAM/ALL
Velocity mod	ON/OFF
AFT STATUS	WINDOW/HIGH/LOW
Digital RF	ON/OFF
Attenuation	ON/OFF
Micro/Jungle	SDA30C263/CXA2076

Dynamic Convergence

Range	Adj Off - 42
H stat	Adj Off - 63
H amp l	Adj Off - 63
H amp r	Adj Off - 63
Up Y	Adj Off - 63
Low Y	Adj Off - 63
Y up l	Adj Off - 63
Y up r	Adj Off - 63
Y low l	Adj Off - 63
Y low r	Adj Off - 63
Mbow up l	Adj Off - 63
Mbow up r	Adj Off - 63
Mbow low l	Adj Off - 63
Mbow low r	Adj Off - 63
V Stat	Adj Off - 63

SUB BRIGHTNESS ADJUSTMENT

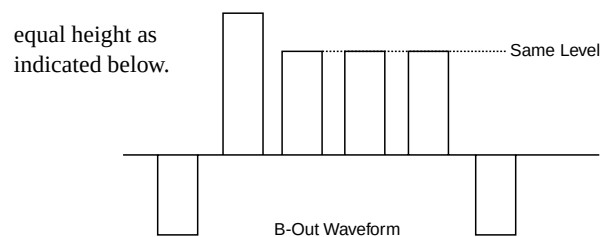
1. Input a Phillips pattern.
2. Set the picture control to minimum.
3. Enter into the 'Picture Adjustment' service menu.
4. Adjust the 'Sub-Brightness' data so that there is barely a difference between the 0 IRE and 10 IRE signal levels.

SUB CONTRAST ADJUSTMENT

1. Input a video that contains a small 100% area on a black background.
2. Set the picture control to maximum.
3. Connect an oscilloscope to Pin 3 of CN301 [A Board].
4. Enter into the 'Picture Adjustment' service menu.
5. Adjust the 'Sub-contrast' data to obtain a black to white amplitude of 2.20V.

SUB COLOUR ADJUSTMENT

1. Receive a PAL colour bar video signal.
2. Connect an oscilloscope to Pin 3 of CN301 [A Board].
3. Enter into the 'Picture Adjustment' service menu.
4. Adjust the 'Sub-colour' data so that the Cyan, Magenta and Blue colour bars are of



Note: The data indicated in the 'TV STATUS' table is dependant on destination, screen size and country.

SYSTEM B/G, D/K, I & L I.F ADJUSTMENT

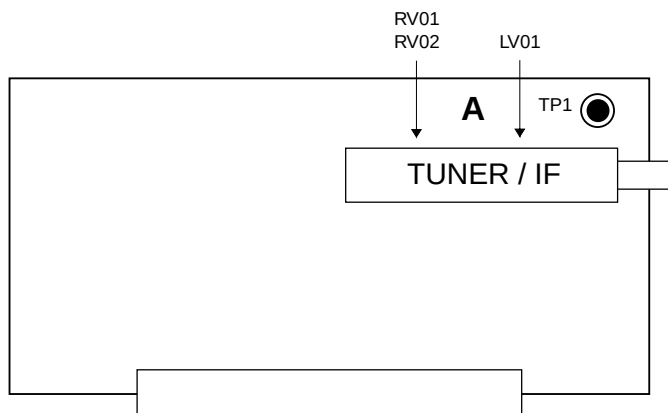
1. Input an off air signal of between 60-100dBuV / 75 ohm terminated, via the tuner socket.
2. Enter into the 'IF Adjustment' service mode [i.e 'TT59'] to fix the I.F frequency to 39.9MHz.
3. Enter into the service mode and select 'Current TV status'.
4. Adjust the I.F coil [LV01] until the 'AFT Status' indicates a 'Window' condition.

SYSTEM L BAND 1 I.F ADJUSTMENT

1. Input an off air signal of between 60-100dBuV / 75 ohm terminated, via the tuner socket.
2. Enter into the 'IF Adjustment' service mode [i.e 'TT59'] to fix the I.F frequency to 34.2MHz.
3. Enter into the service mode and select 'Current TV status'.
4. Adjust the RV02 control until the 'AFT Status' indicates a 'Window' condition.

TUNER AGC ADJUSTMENT

1. Receive a signal of 63dBuV / 75 ohm terminated, via the tuner socket.
2. Measure the voltage at test point 1 [A Board].
3. Adjust RV01 control to obtain a voltage of 3.0V +/- 0.3V.

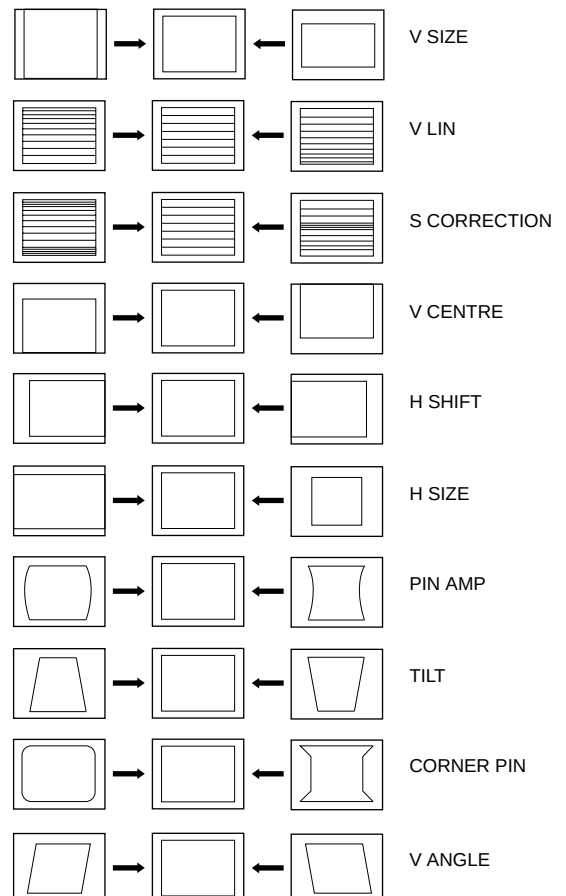


DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the 'Geometry Adjustment' service menu.
2. Select and adjust each item in order to obtain the optimum image.

GEOMETRY ADJUSTMENT

V size	Adj
V position	Adj
S Correction	Adj
V Linearity	Adj
H size	Adj
H position	Adj
Pin Amp	Adj
Pin Phase	Adj
AFC Bow	Adj
AFC Angle	Adj
EHT V	1
EHT H	0
Lo Corn Pin	Adj
Up Corn Pin	Adj



4-2. 'TT' TEST MODE :

'TT' Mode is available by pressing the Test key twice. It is exited by pressing 0 twice, or by pressing the Test key, or by pressing the TV key, or by pressing the TV key, or by switching the set into standby.

The functions described below are available by pressing 2 digits:

00	Cancel Test mode
01	Picture Maximum
02	Picture Minimum
03	Volume & Headphone Volume 35%
04	Volume & Headphone Volume 50%
05	Volume & Headphone Volume 65%
06	Volume & Headphone Volume 80%
07	Ageing mode Enable/Disable
08	Shipping Condition
09	Display TV status
10	No function
11	Sub Picture adjustment
12	Sub Colour adjustment
13	Sub Brightness adjustment
14	Text H-Position adjustment
15	Rotation Test
16	No function
17	No function
18	No function
19	No function
20	No function
21	Destination A/D (East Menu/West Text)
22	Destination L (West Menu/West Text)
23	Destination E (West Menu/West Text)
24	Destination U (West Menu/ West Text)
25	Destination D (East Menu/Greek Text)
26	Destination B (East Menu/West Text)
27	Destination K (East Menu/East Text)
28	Destination R (Russian Menu/Russian Text)
29	No function
30	No function
31	Toggle Auto Shutoff Disable
32	Toggle Bit Error Rate Display
33	Toggle Terminal Debug Mode
34	No function
35	No function
36	No function
37	No function
38	Default Dynamic Convergence Settings
39	No function
40	No function
41	Re-initialize the NVM

42	Re-initialise geometry settings
43	Default Programme info in NVM with factory settings
44	Default favourite pages to 100,101,102 and 103
45	Switch off all Parental locks
46	No function
47	Default MSP settings
48	Set NVM as Non-virgin
49	Set NVM as virgin
50	No function
51	Dolby Pro-Logic On, Volume 90%
52	Noise On Left Speaker
53	Noise On Right Speaker Only
54	Noise On Centre Speaker Only
55	Noise On Surround Speaker Only
56	Set Colour to Minimum and Picture to Maximum
57	Set Colour and Picture to Minimum and Adjust Sub-Brightness
58 - 60	No function
61	N-board Reset
62	Toggle the 3.3v regulator on A2-board
63	Toggle Attenuation switch on Port Expander
64	Smart Link Test- Toggle the Smart Link pin 50 times
65	No function
66	No function
67	No function
68	Pre-set AV Labels
69	No function
70	No function
71	Select Compact Text/Compact Text-2
72	Balance Left/Right (press ← key for balance left, → for balance right, and ↑ for centre balance)
73	Dual Sound Headphones (↑key for A, ↓ key for B)
74	Dual Sound Speakers (↑key for A, ↓ key for B)
75	DSP Bypass
76	Dolby Enabled/Disabled toggle
77	Setup trap switch
78	Set Screen Size
79	Wide Setup
80	No function
81	Velocity Mod ON
82	Velocity Mod OFF

83	Special Picture Mode - Personal mode, reset & brightness = 0
84	Text Interlace odd (Non interlace mode = 3)
85	Text Interlace even (Non interlace mode = 2)
86	Auto Cut Off ENABLE
87	Auto Cut Off DISABLE
88	Diagnostics OFF
89	Diagnostics ON
90	No function
91	Clear & disable OSD
92	Enable OSD
93	D/K Nicam Enable
94	D/K Nicam Disable
95	Reset language select menu on power up
96	Set all programme labels to default
97	Toggle MHEG Mode

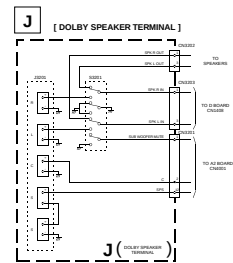
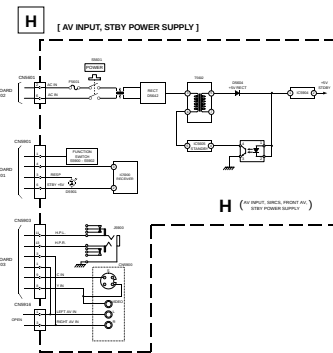
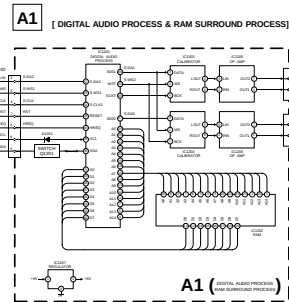
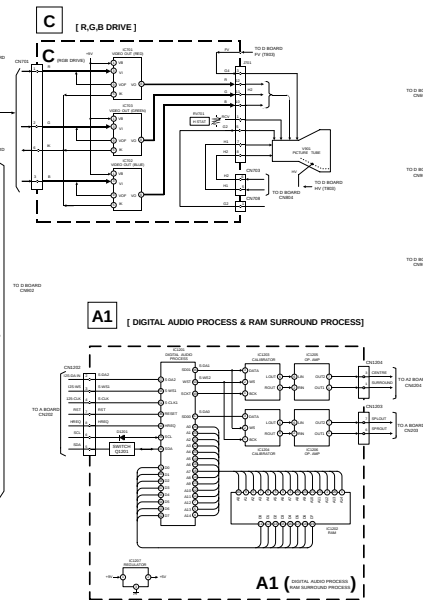
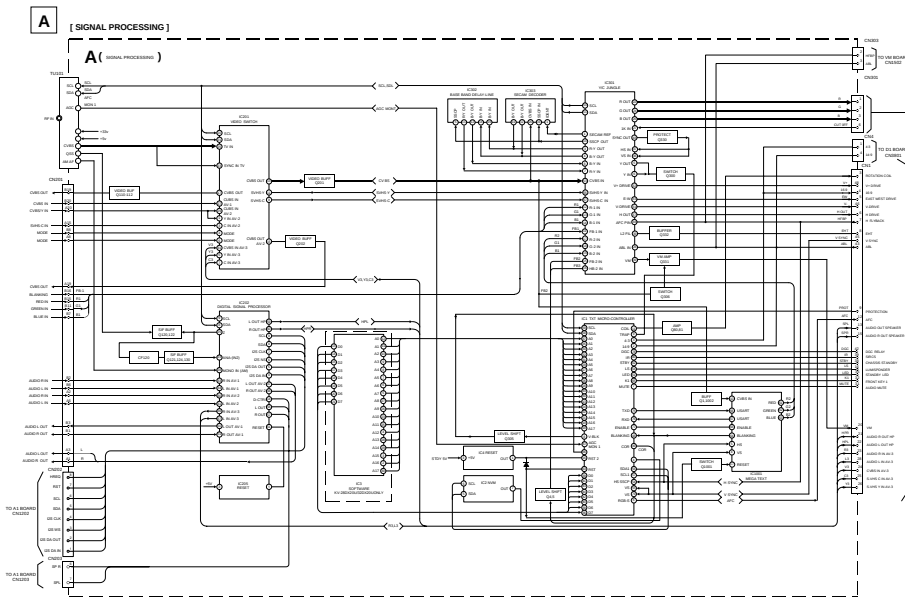
4-3. 'T' TEST MODE :

'T' Mode is available by pressing the Test key once. It is exited by pressing the Test key twice, or by pressing the TV key, or by switching the set into standby.

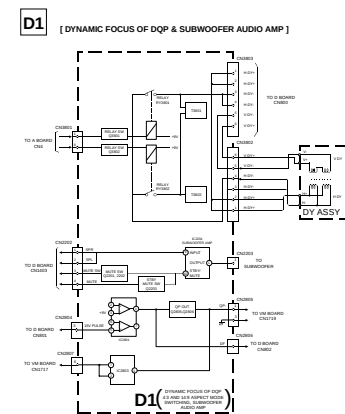
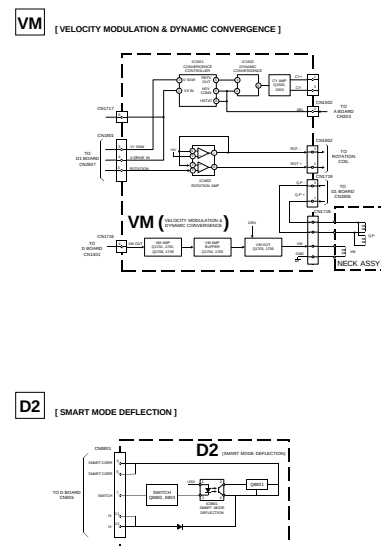
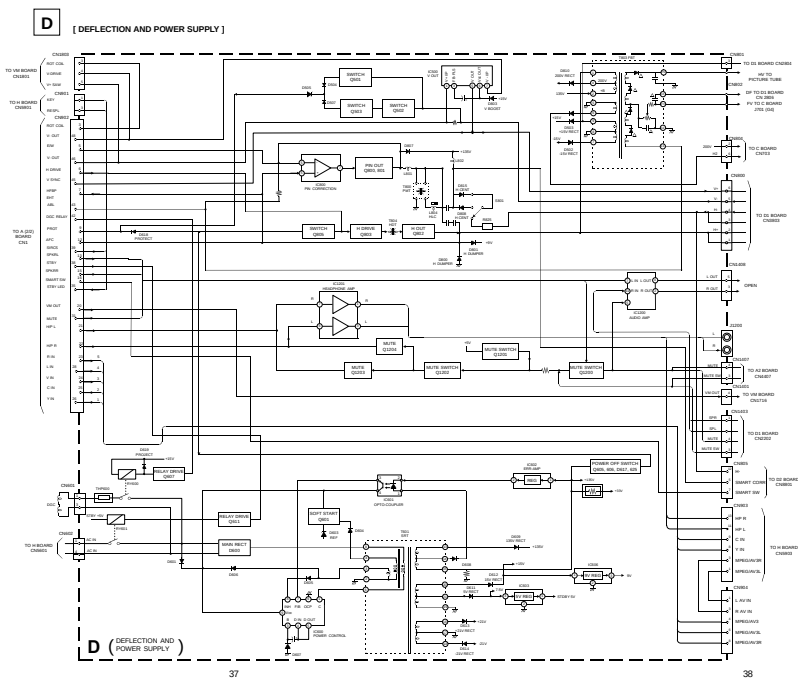
The functions described below are available by pressing the indicated key :

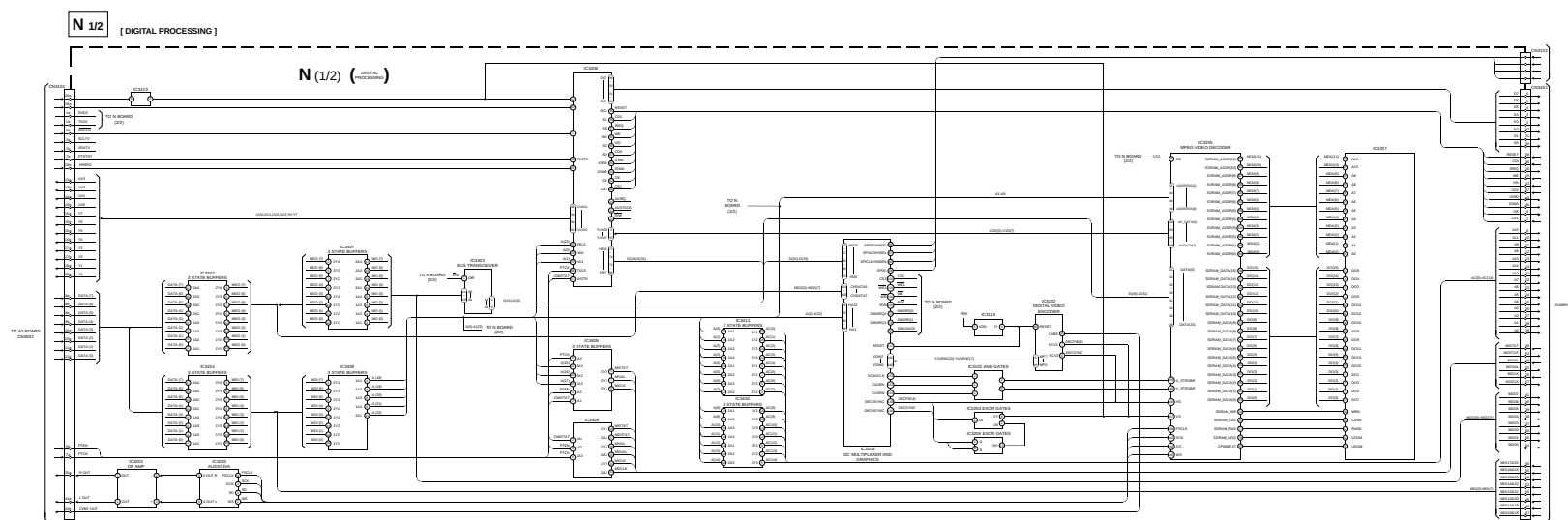
Key	T Mode Function
Volume +	Volume Maximum
Volume -	Volume Minimum
Picture +	Picture Maximum
Picture -	Picture Minimum
Colour +	Colour Maximum
Colour -	Colour Minimum
Brightness +	Brightness Maximum
Brightness -	Brightness Minimum
Hue +	Hue Maximum
Hue -	Hue Minimum
Sharpness +	Sharpness Maximum
Sharpness -	Sharpness Minimum
Balance Left	Balance Full Left
Balance Right	Balance Full Right
Treble +	Treble Maximum
Treble -	Treble Minimum
Bass +	Bass Maximum
Bass -	Bass Minimum
Analogue +	Select Analogue Value Maximum
Analogue -	Select Analogue Value Minimum

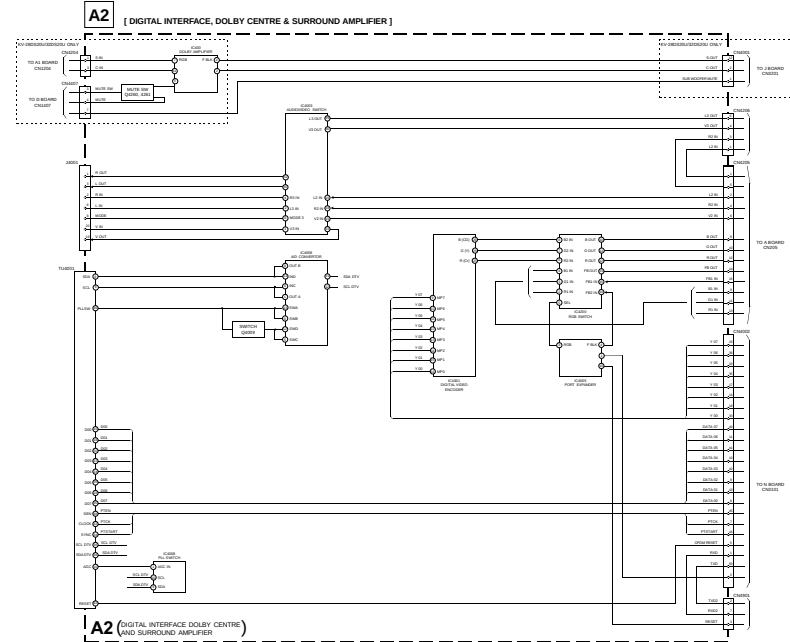
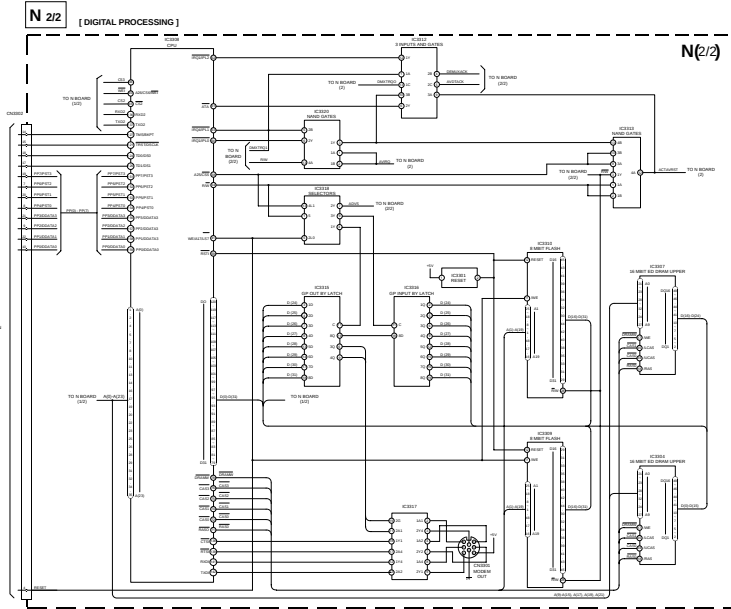
BLOCK DIAGRAMS 1



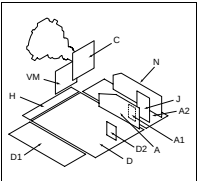
BLOCK DIAGRAMS 2







5-2. CIRCUIT BOARD LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

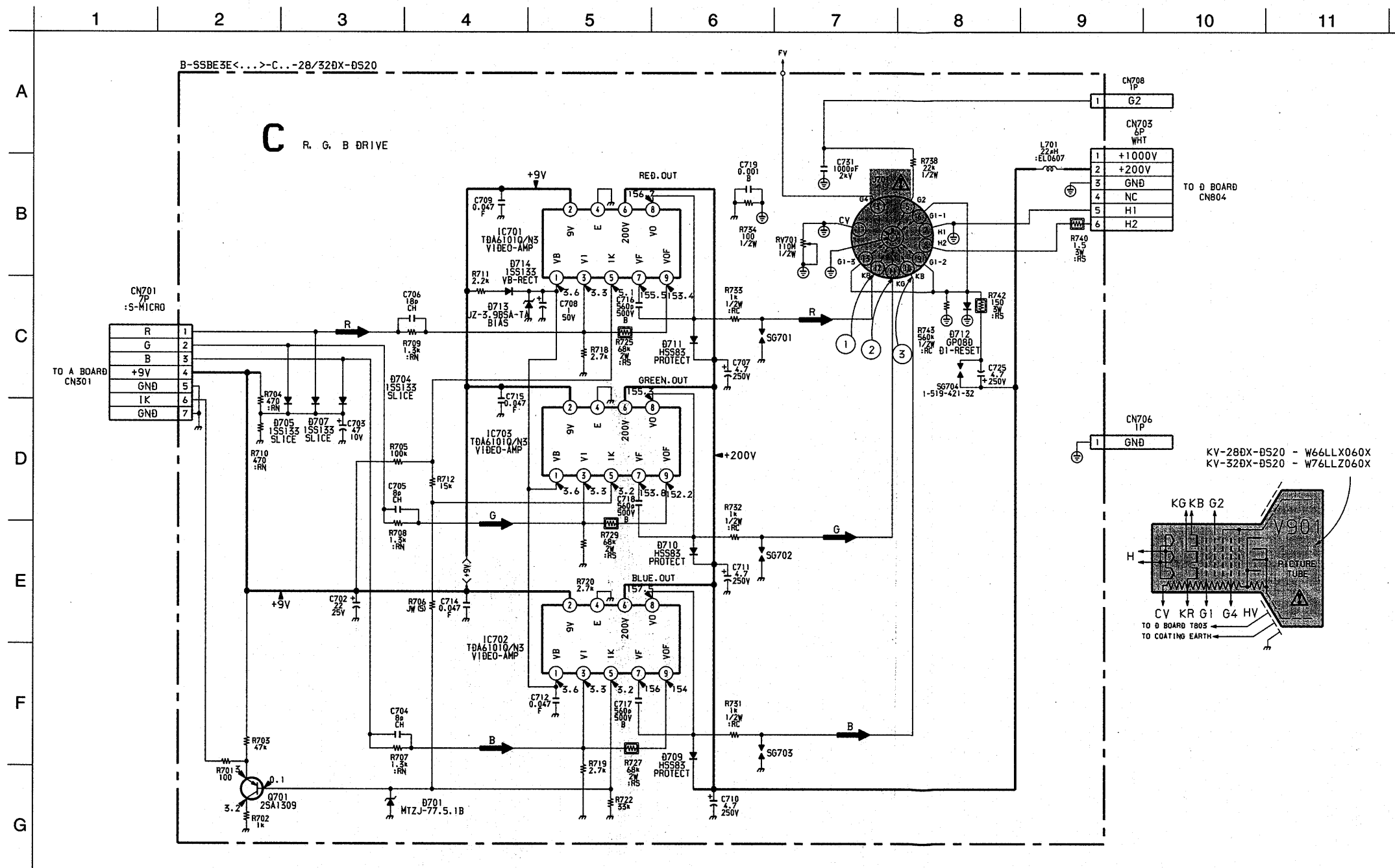
- Note:**
- All capacitors are in μF unless otherwise noted.
 - μF (pF) (nF) or less are not indicated except for electrolytic types.
 - Indication of resistance, which does not have one for rating electrical power, is as follows:
 - High - 1000
 - Electrical power rating - 10000
 - Chip resistors are 10000
 - All resistors are in Ω , unless otherwise noted.
 - $\text{N} = 1000 \Omega$, $\text{M} = 1000000 \Omega$
 - XXXX** - nonflammable resistor
 - XXXX** - fusible resistor
 - XXXX** - internal component
 - XXXX** - panel designation or adjustment for repair
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - All voltages are in Volts.
 - Readings are taken with a 10Meters digital multimeter.
 - Readings are taken with a color bar input signal.
 - Voltage variations may be noted due to normal production tolerances.
 - SB** - Bus
 - SB** - Bus
 - SB** - RF signal path
 - SB** - earth - ground
 - SB** - earth - chassis

Reference Information

RESISTOR	RM	METAL FILM
RC		SOLID
PPRD		NON FLAMMABLE CARBON
FUSE		NON FLAMMABLE FUSIBLE
RS		NON FLAMMABLE METAL OXIDE
RB		NON FLAMMABLE CEMENT
RW		NON FLAMMABLE WIREWOUND
ADJ		ADJUSTMENT RESISTOR
COL	LF-AL	MICRO INDUCTOR
CAPACITOR	TA	TANTALUM
	PS	STYROL
	PP	POLYPROPYLENE
	PT	MYLAR
	MPS	METALIZED POLYESTER
	MPP	METALIZED POLYPROPYLENE
	ALB	BIPOLAR
	ALT	HIGH TEMPERATURE
	ALR	HIGH RIPPLE

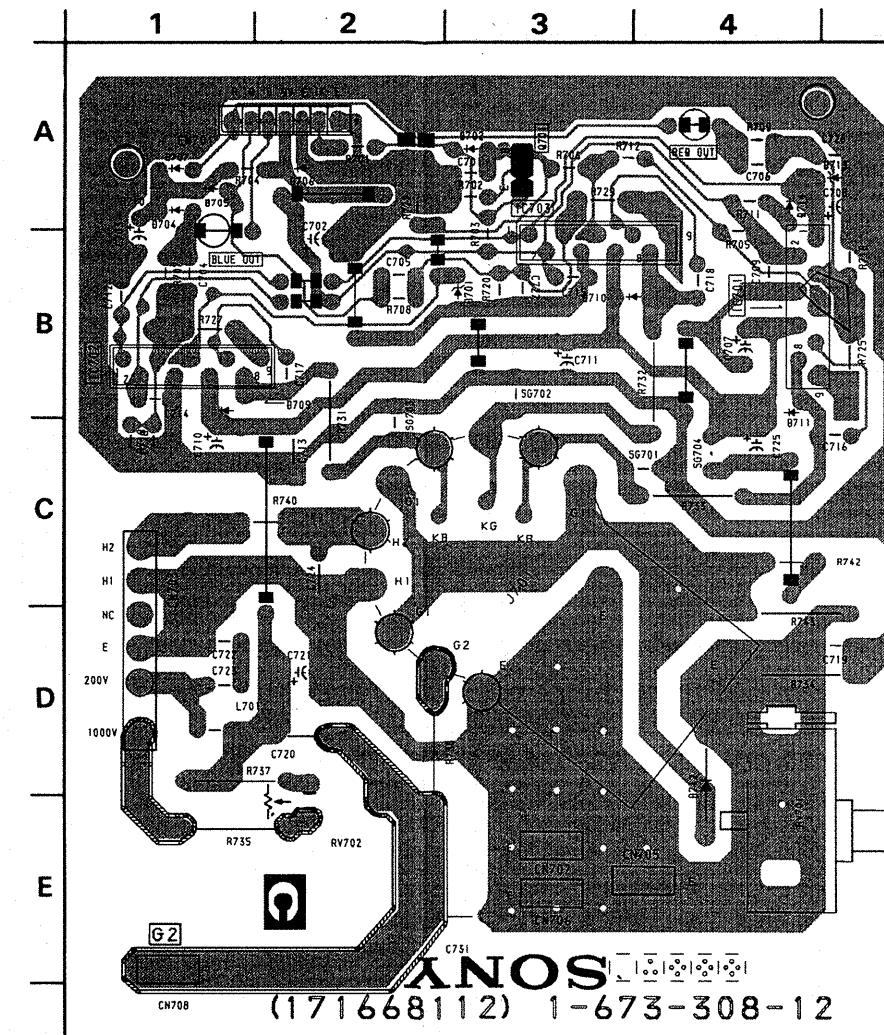
Note: The components identified by shading and marked **A** are critical for safety. Replace only with the part numbers specified in the parts list.

Note: Les composants identifiés par une trame et par une marque **A** sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.



C [R, G, B DRIVE]

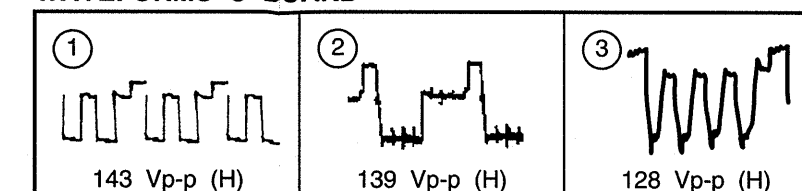
C Board



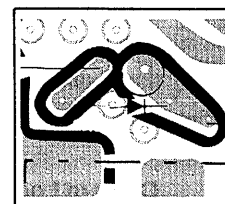
C Board Location

IC	
IC701	B-4
IC702	B-1
IC703	A-3
TRANSISTOR	
Q701	A-3
DIODE	
D701	B-3
D704	A-1
D705	A-1
D707	A-1
D709	B-1
D710	B-3
D711	B-4
D712	D-4
D713	A-4
D714	A-4

WAVEFORMS C BOARD



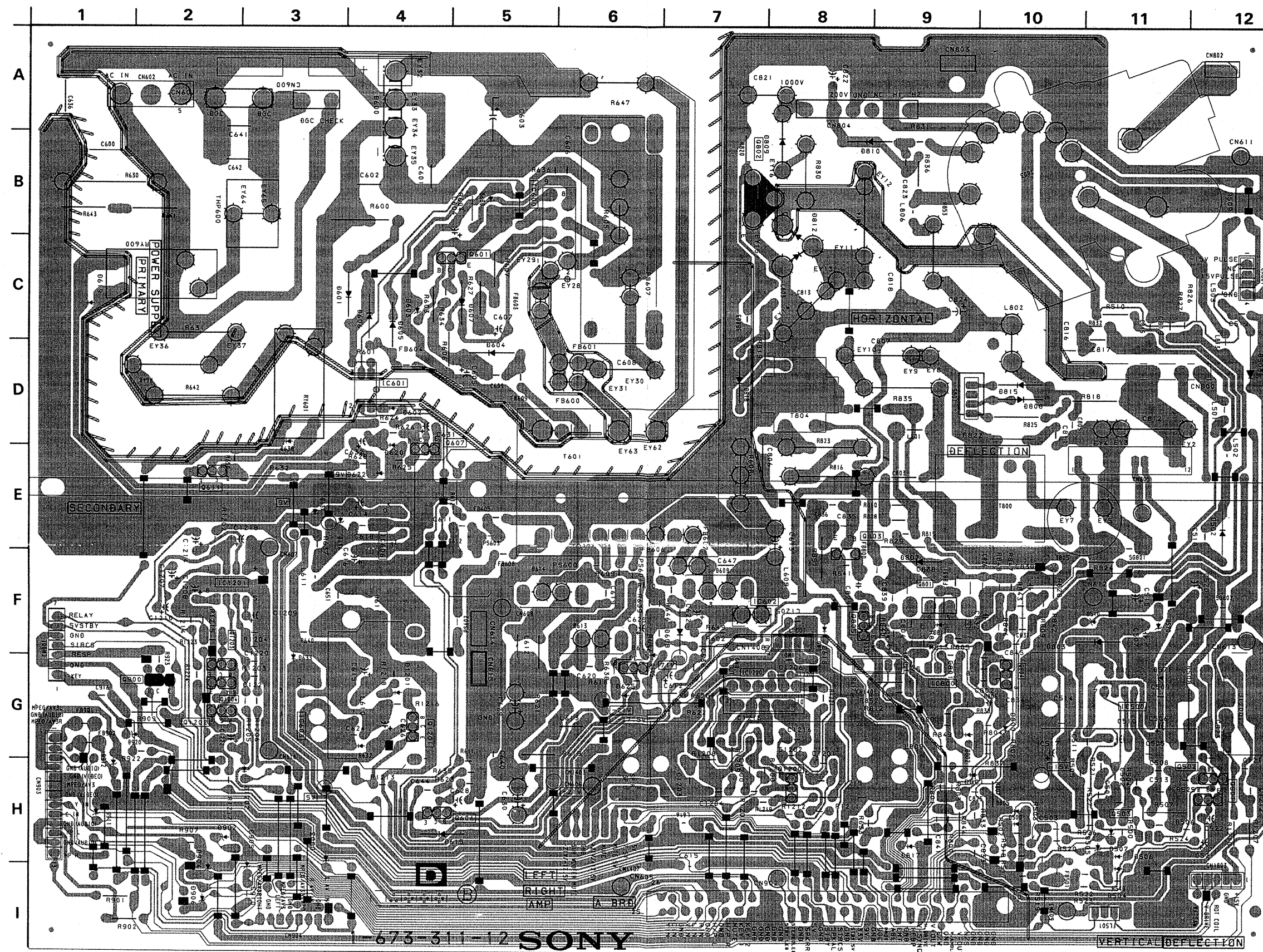
D [DEFLECTION & POWER SUPPLY]

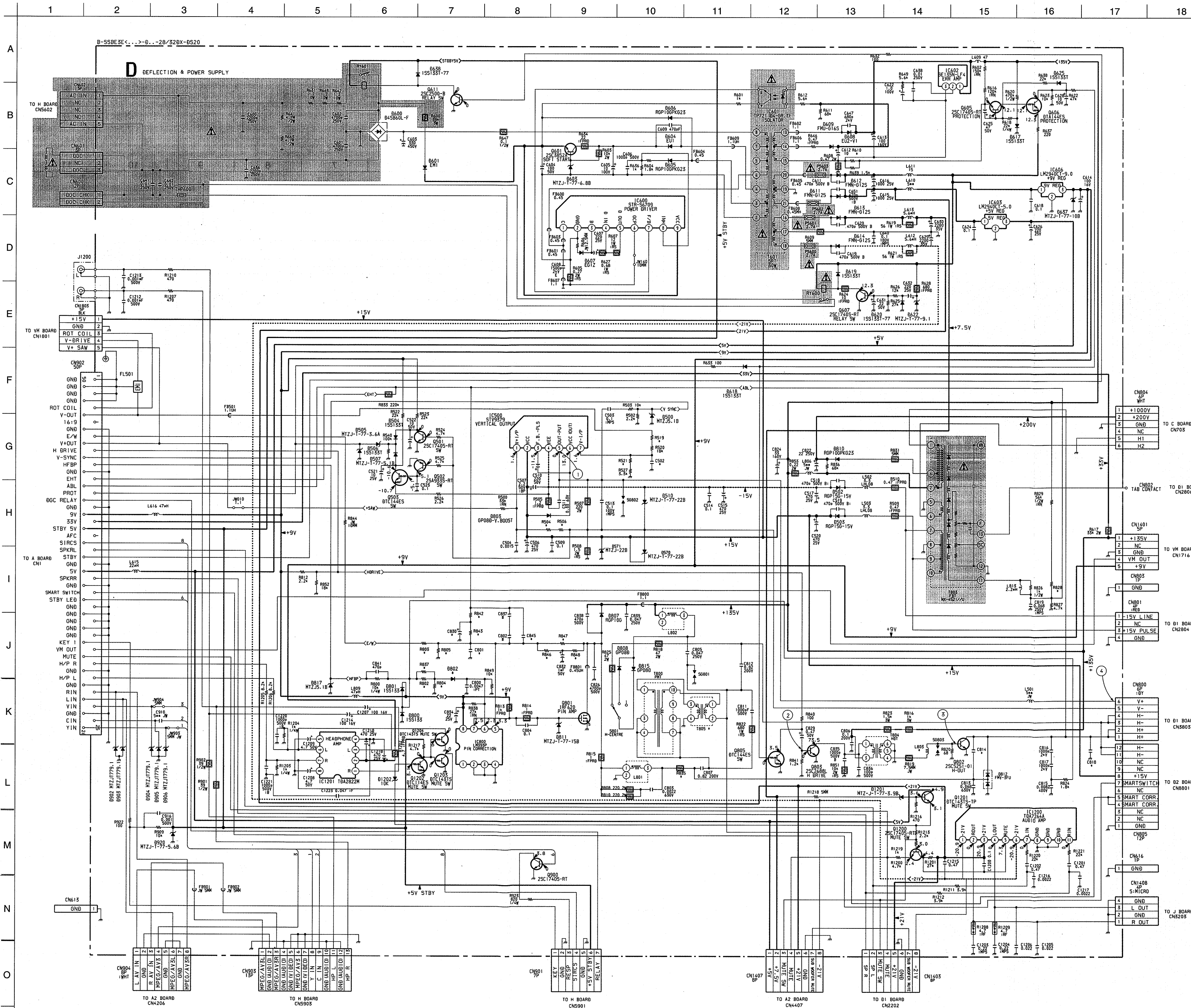


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

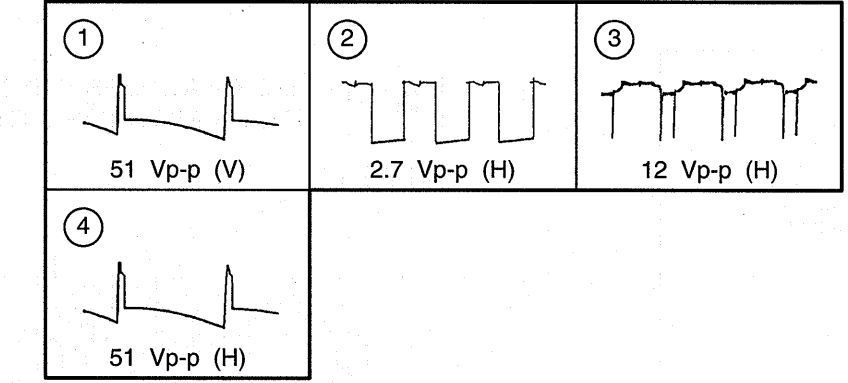
D Board Location

IC		D600	A - 4
IC500	G - 11	D601	C - 4
IC600	B - 6	D603	C - 4
IC601	D - 4	D604	D - 5
IC602	F - 8	D605	C - 4
IC603	G - 3	D606	C - 4
IC606	E - 4	D607	C - 5
IC800	G - 9	D608	F - 7
IC1200	G - 8	D609	F - 7
IC1201	F - 9	D611	F - 4
TRANSISTOR		D612	E - 5
Q501	H - 12	D613	F - 6
Q502	H - 12	D614	F - 6
Q503	H - 11	D617	F - 7
Q601	C - 5	D618	G - 8
Q605	F - 7	D619	E - 4
Q606	H - 5	D620	E - 4
Q607	D - 5	D622	E - 4
Q611	E - 2	D625	G - 6
Q801	F - 9	D637	E - 3
Q802	B - 7	D638	E - 2
Q803	E - 9	D800	G - 10
Q805	F - 8	D801	G - 10
Q900	G - 2	D802	G - 10
Q1200	H - 8	D803	F - 11
Q1201	G - 4	D807	F - 9
Q1202	G - 3	D808	D - 10
Q1203	G - 3	D810	B - 8
Q1204	G - 3	D811	F - 9
DIODE		D812	B - 8
D500	H - 10	D815	D - 10
D502	H - 11	D817	H - 9
D503	I - 12	D902	H - 3
D504	I - 11	D903	H - 3
D505	H - 11	D904	H - 2
D506	H - 11	D905	H - 3
D507	H - 11	D906	I - 2
D510	F - 11	D920	G - 1
D570	F - 11	D1201	G - 4
D571	G - 11	D1202	H - 2

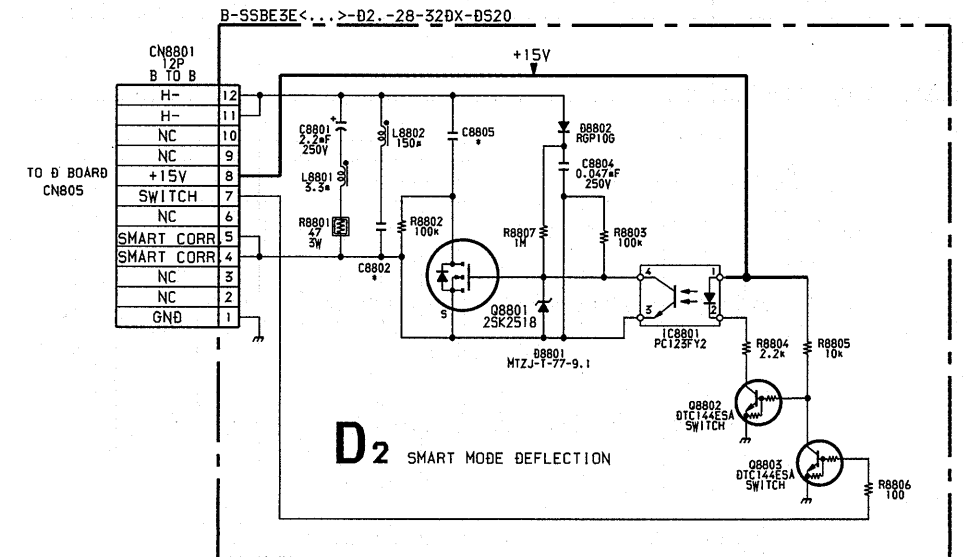




WAVEFORMS D BOARD

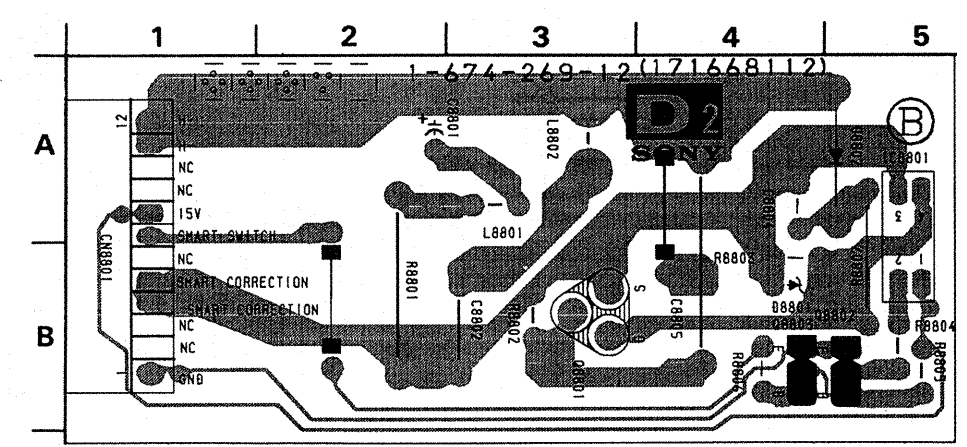


D Bore 1" Mark				
Ref	280520UJ	32D520U	280X20U	32DX20U
C502	4.007F	0.0019MF	4.007F	0.0019MF
C801	0.0047MF	0.0023MF	0.0047MF	0.0023MF
C814	0.021MF	0.002MF	0.021MF	0.02MF
C818	4.007F	0.001MF	4.007F	0.001MF
C830	0.47MF		0.47MF	
C845	47PF		47PF	
L802	15S1337-77	JW15(0MM)	15S1337-77	JW15(0MM)
D603	COIL, AIR CORE	JW15(0MM)	COIL, AIR CORE	JW15(0MM)
R504	33K	12K	33K	12K
R506	6.8K	27K	6.8K	27K
R519	8.2K	18K	8.2K	18K
R521	27K	39K	27K	39K
R610	2.2K	1.8K	2.2K	1.8K
R802	4.7K	20K	4.7K	22K
R803	3.3K	6.8K	3.3K	6.8K
R804	6.8K		6.8K	
R805	33K	12K	33K	12K
R828	15K	18K	15K	18K
R835	27	22	27	22
R837		22K		22K
R842	100K		100K	
R843	330K		330K	
R846	390K	3.9M	390K	3.9M
R847	560K	2.2M	560K	2.2M
R848	22K	2.2M	22K	2.2M
T805	1-433-980-11	1-435-107-11	1-433-980-11	1-435-107-11

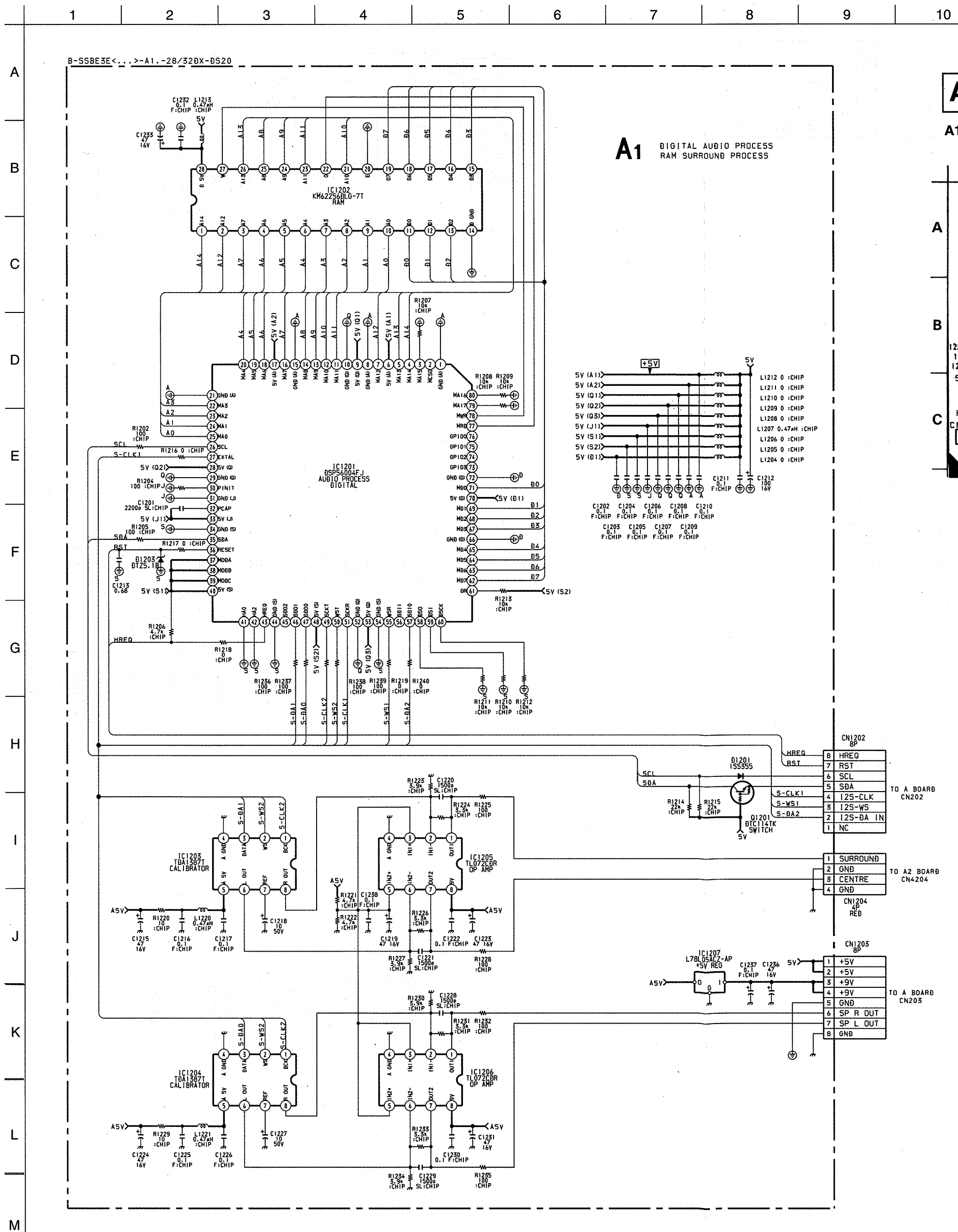


D2 [SMART MODE
DEFLECTION]

D2 Board

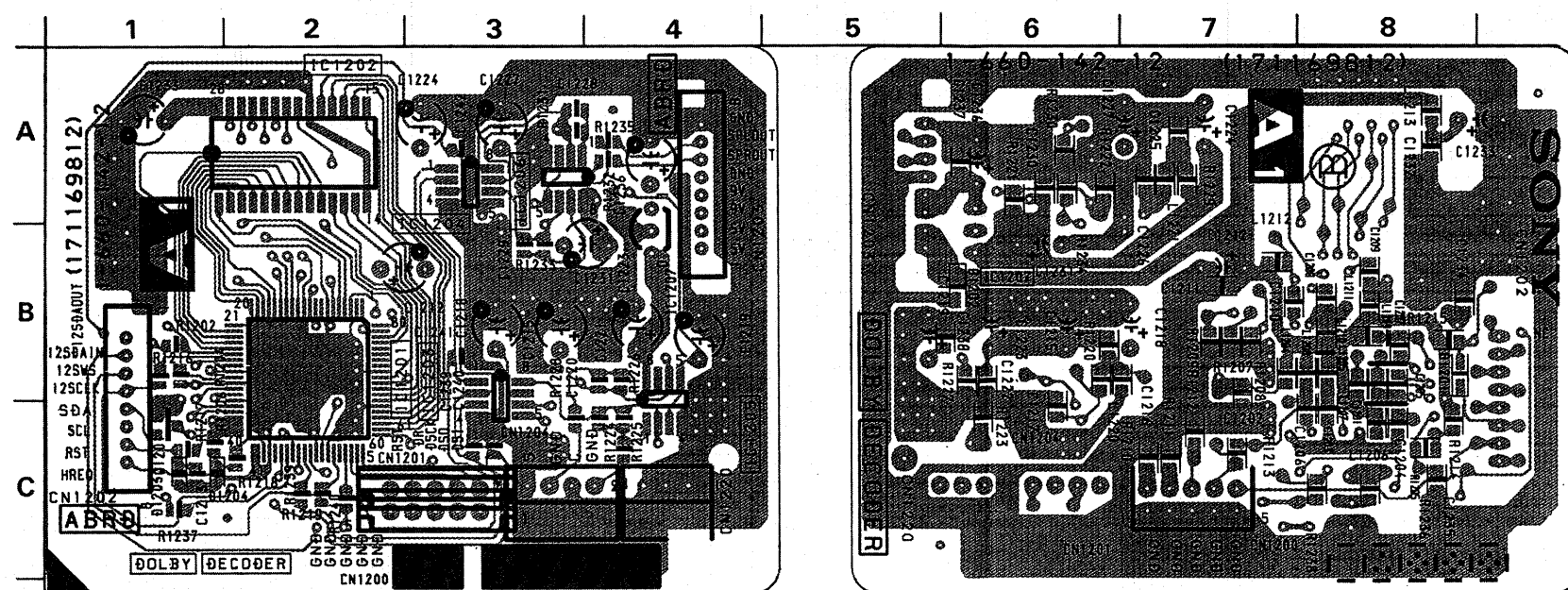
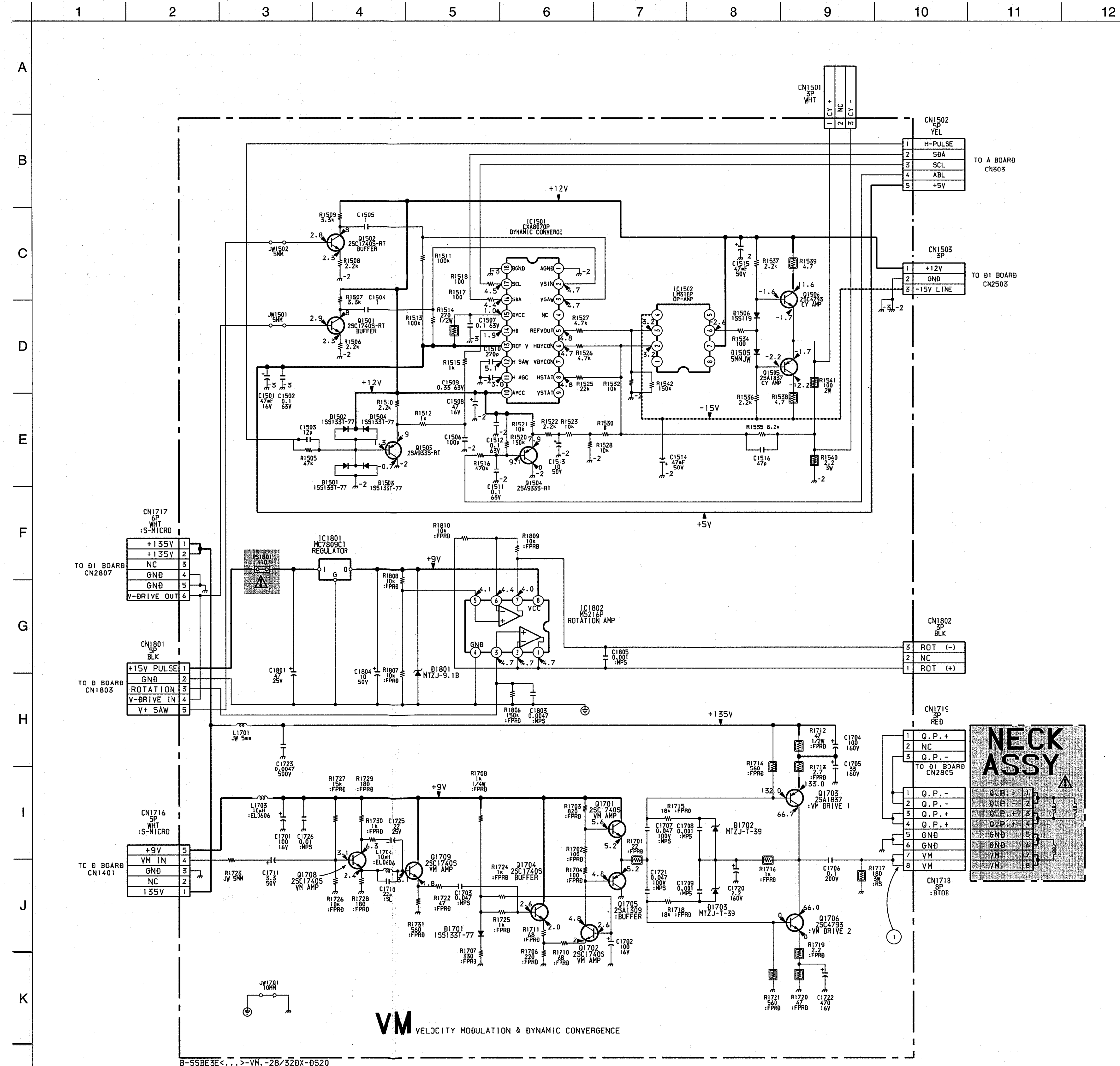
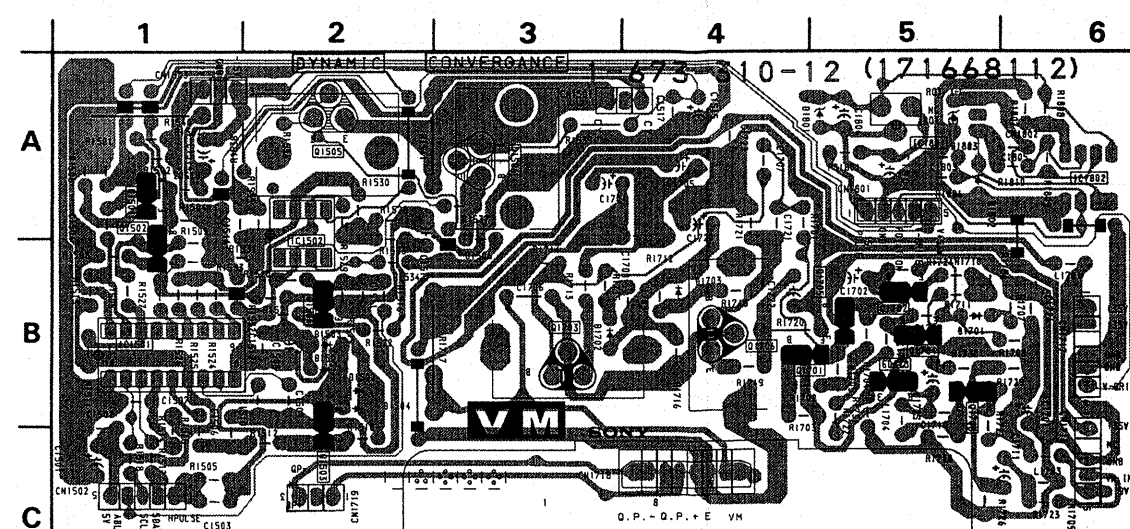


D2 Board "A" Mark				
Ref	28DS20U	32DS20U	28DX20U	32DX20U
C8802	0.16MF	0.12MF	0.16MF	0.12MF
C8805	1.2MF	0.33MF	1.2MF	0.33MF

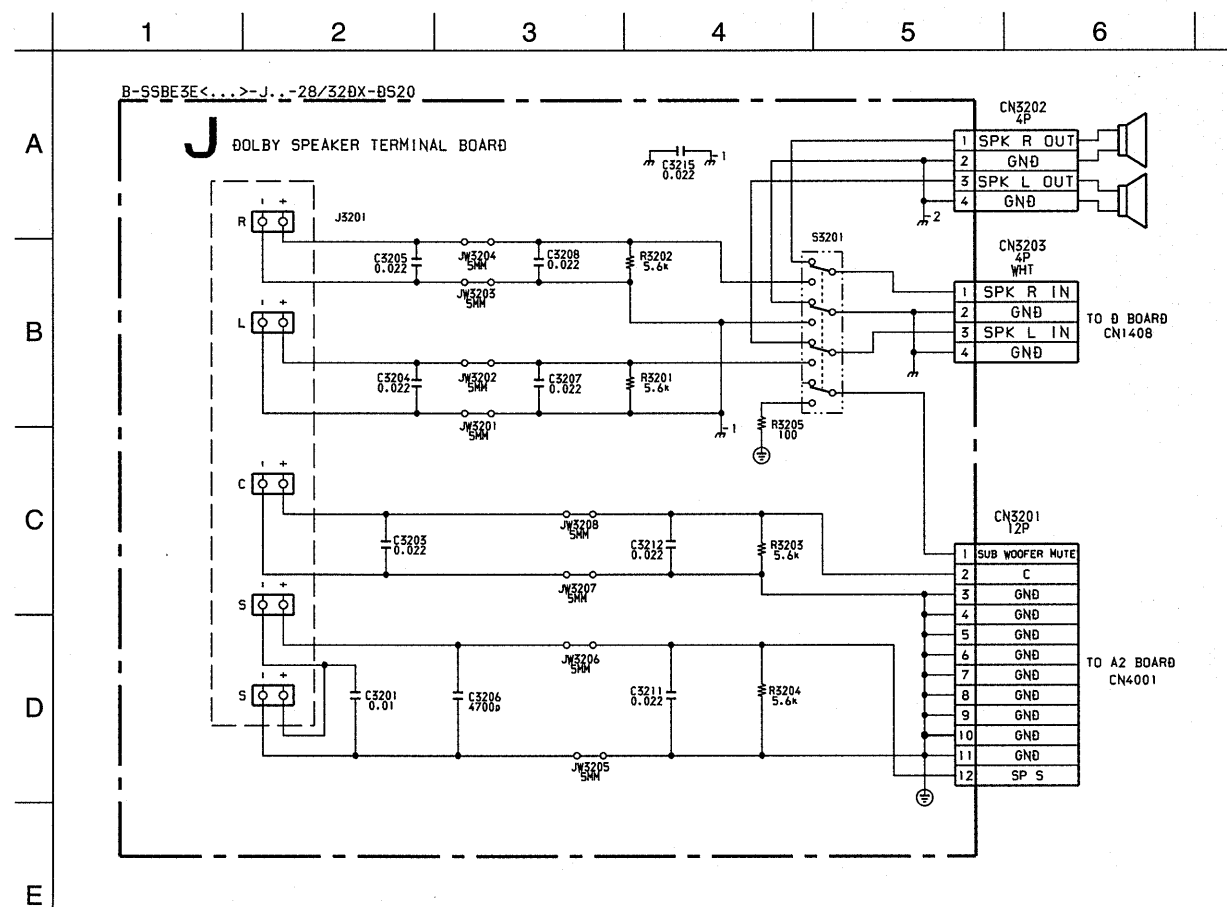


A1 [DIGITAL AUDIO PROCESS
RAM SURROUND PROCESS

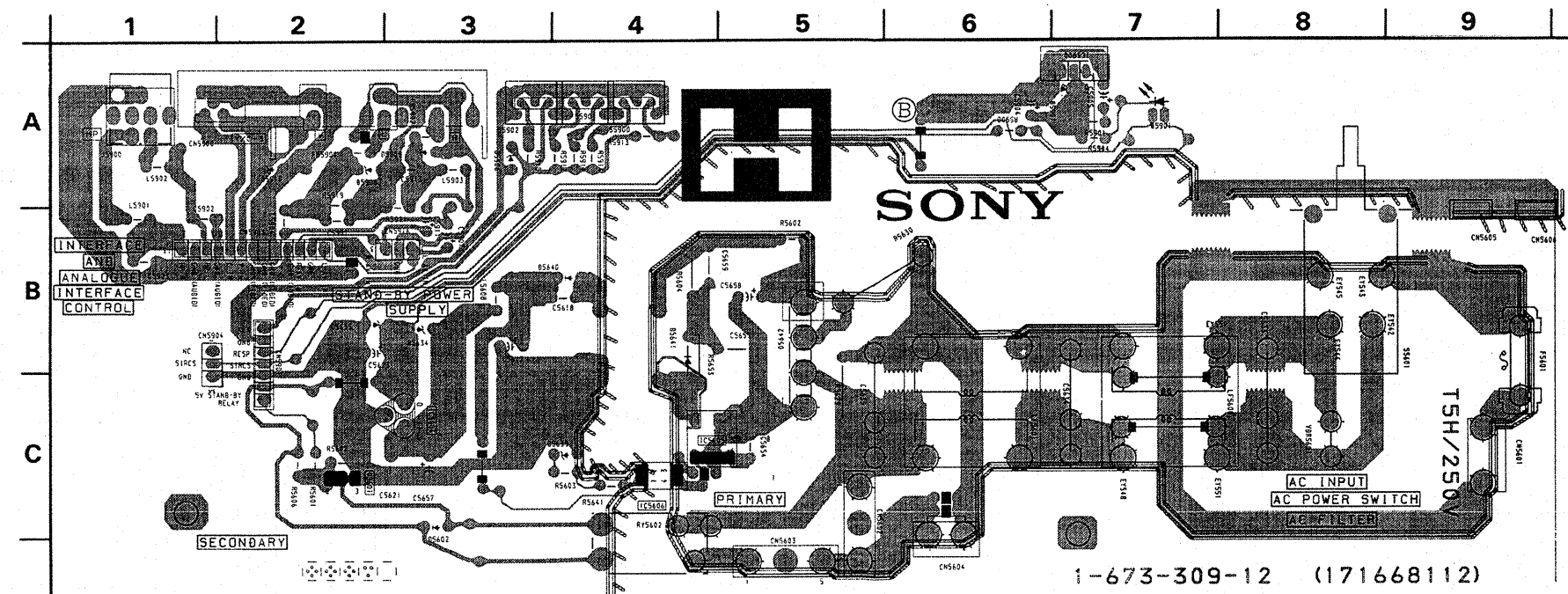
A1 Board

**VM** VELOCITY MODULATION
& DYNAMIC CONVERGENCE**VM Board**

J Board



H Board

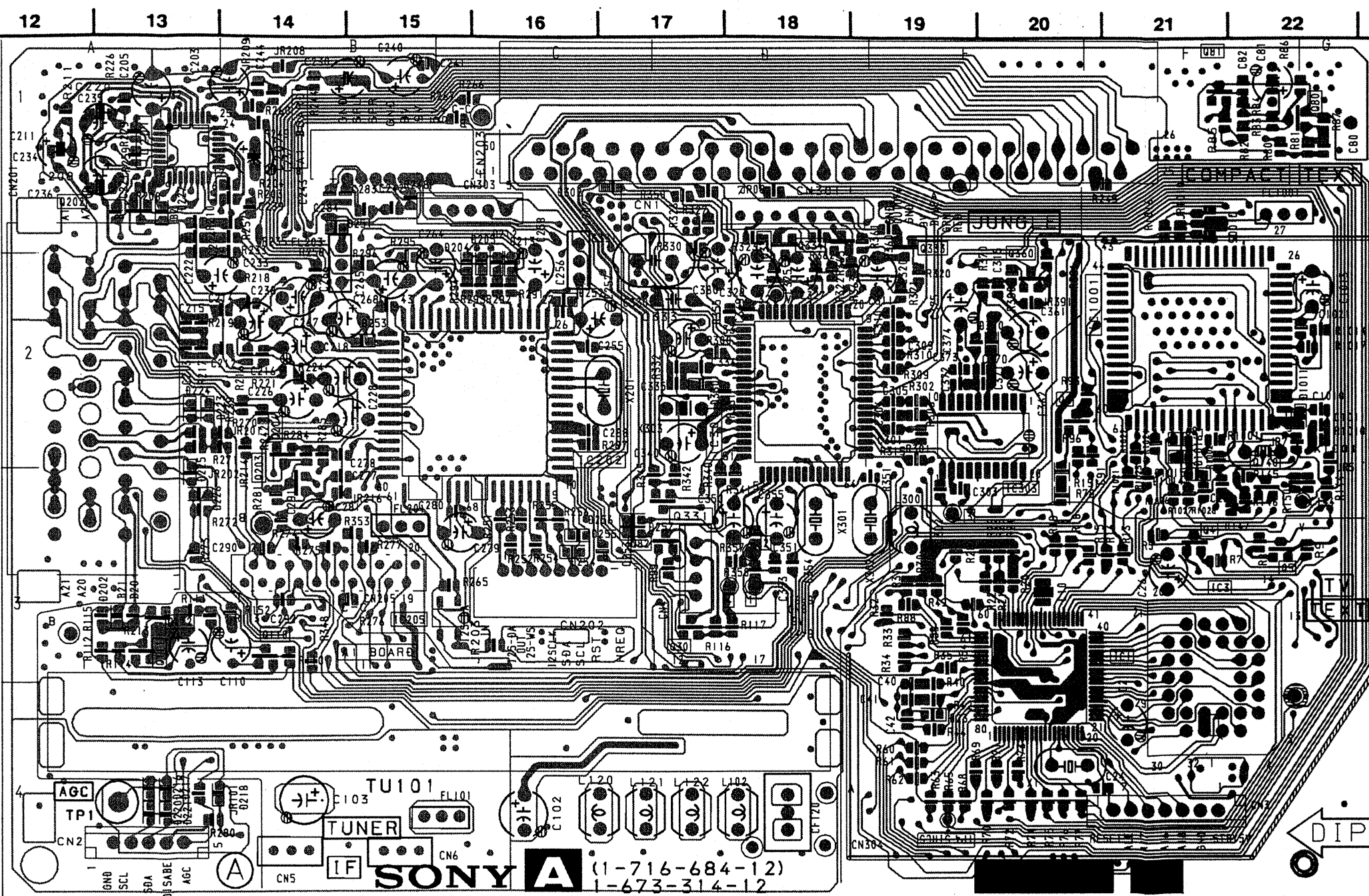
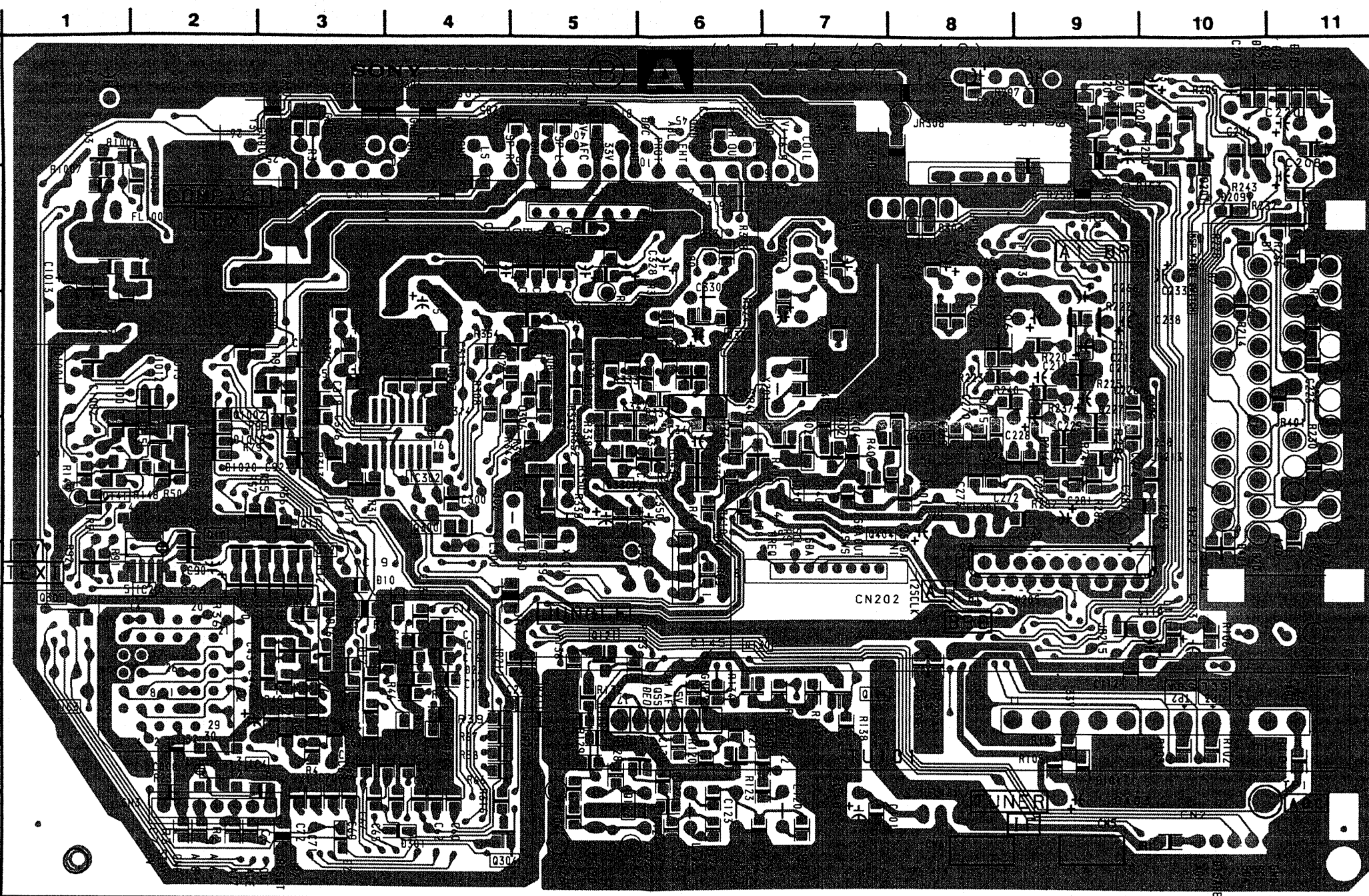


HAV INPUT. SIRCS. FRONT AV. STBY POWER SUPPLY

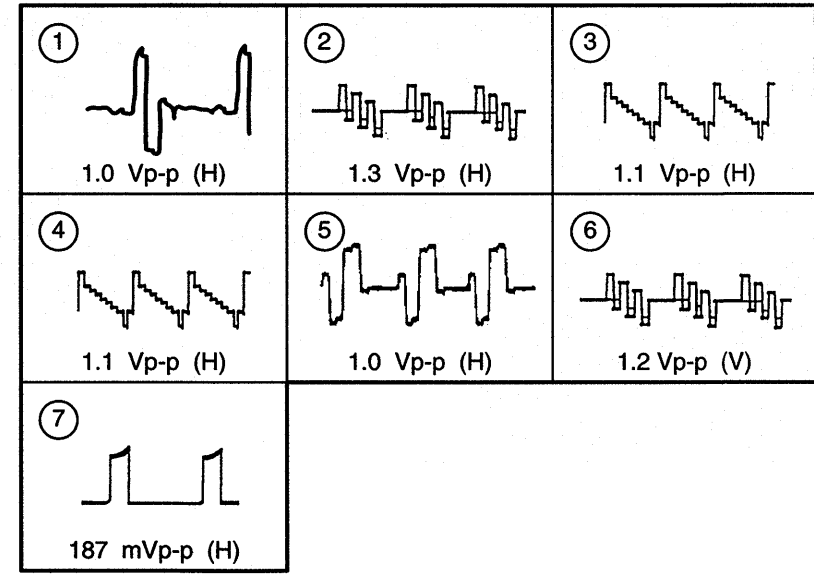
A Board Location		
IC	Q405	D-7
IC1	F-21	Q1001 C-1
IC2	E-2	Q1002 C-3
IC3	F-2	
IC4	G-2	D2 G-3
IC201	A-13	D16 E-3
IC202	C-16	D30 C-5
IC205	E-15	D101 F-9
IC301	C-19	D201 A-11
IC302	D-4	D202 E-13
IC1001	C-21	D203 A-11
TRANSISTOR		
Q1	D-21	D204 B-16
Q4	E-22	D205 B-16
Q15	D-2	D206 C-9
Q30	E-17	D207 C-9
Q80	A-23	D208 A-11
Q81	A-22	D209 B-11
Q82	E-17	D210 A-11
Q110	F-14	D211 B-11
Q111	E-13	D212 B-16
Q112	E-13	D213 B-16
Q120	F-7	D214 D-9
Q122	F-6	D215 D-9
Q140	D-22	D216 G-14
Q141	D-1	D217 G-14
Q201	B-10	D218 G-14
Q202	B-13	D219 G-14
Q203	D-15	D220 G-14
Q204	D-15	D221 G-14
Q300	E-4	D222 A-10
Q304	G-5	D223 D-14
Q305	E-1	D224 D-14
Q306	C-5	D225 D-14
Q330	D-6	D226 D-14
Q331	D-18	D227 B-14
Q332	C-6	D228 B-15
Q333	B-19	D229 B-16
Q334	B-18	D303 B-8
Q335	B-18	D304 B-8
Q401	D-7	D305 C-5
Q402	D-7	D306 B-4
Q403	D-8	D370 C-20
Q404	E-7	D401 E-10
		D402 D-7
		D1010 B-2

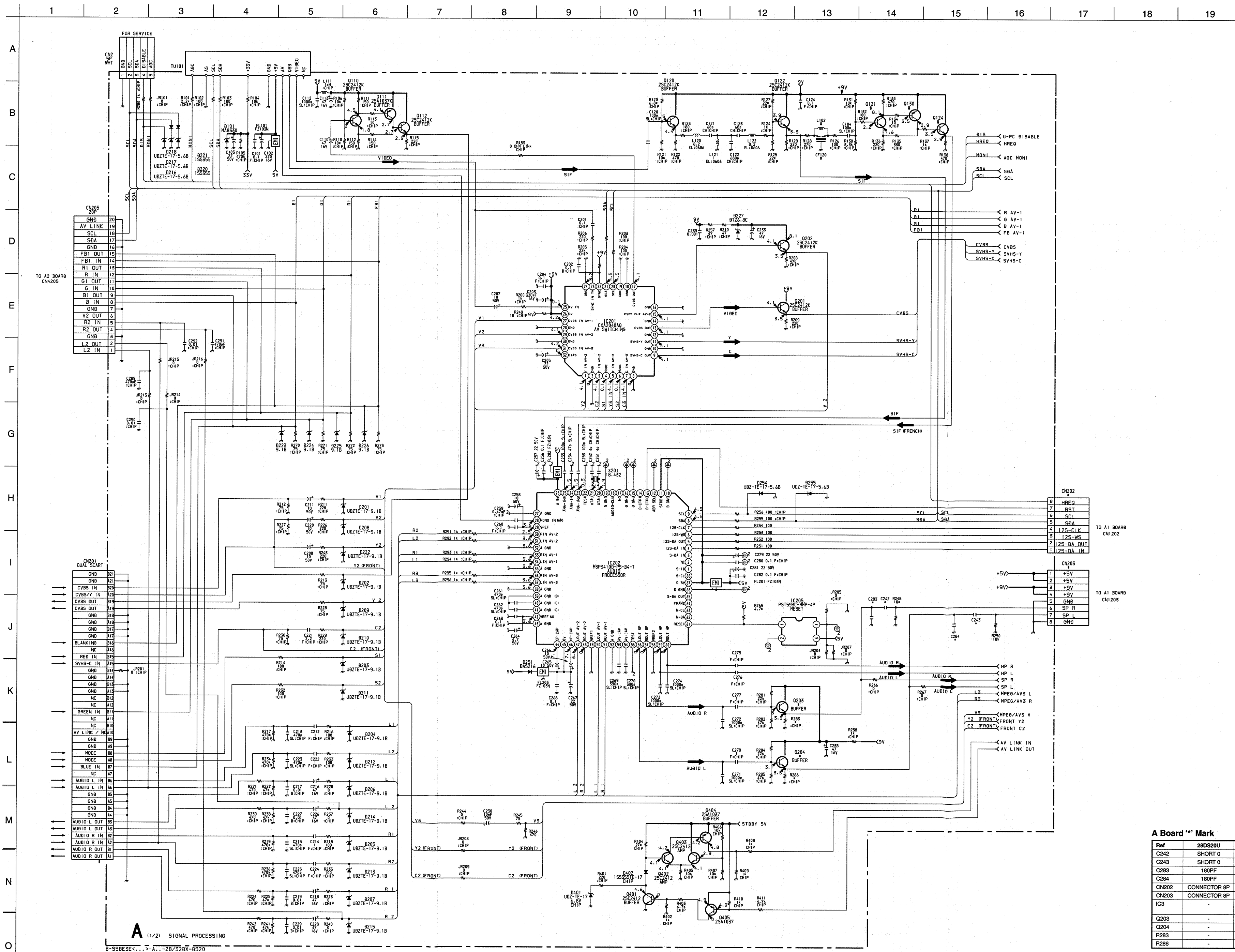
A [SIGNAL PROCESSING]

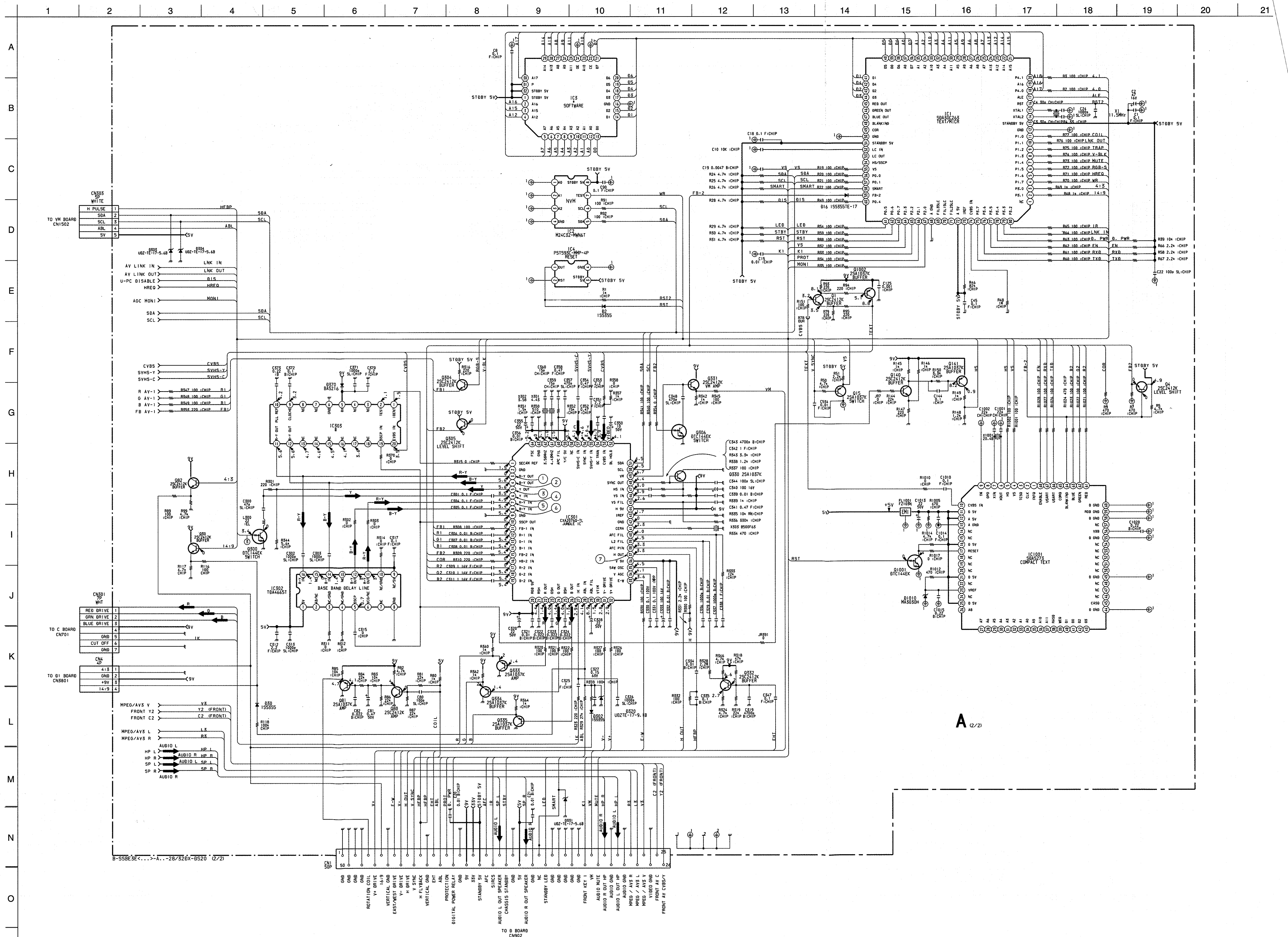
A Board

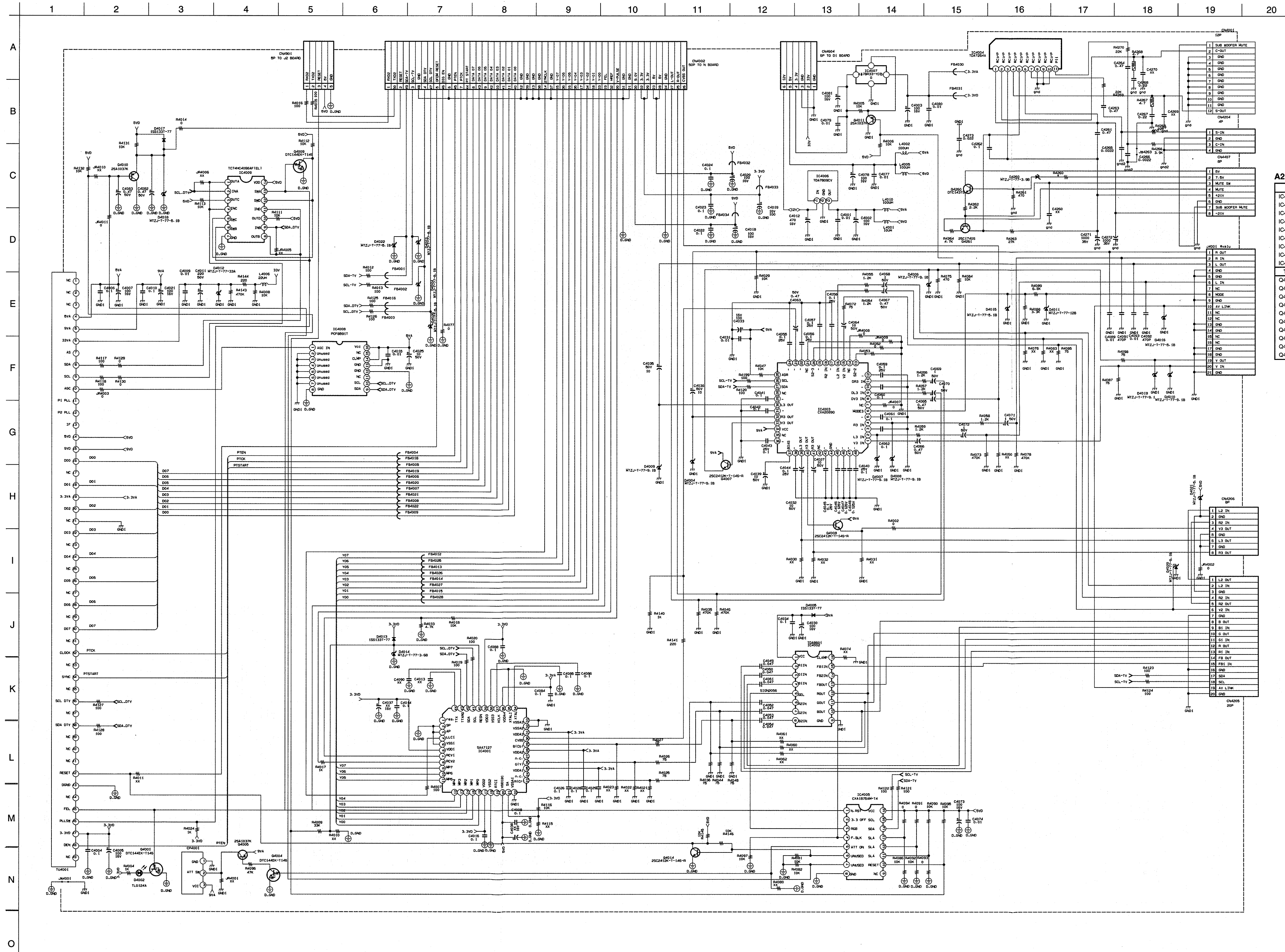


WAVEFORMS A BOARD





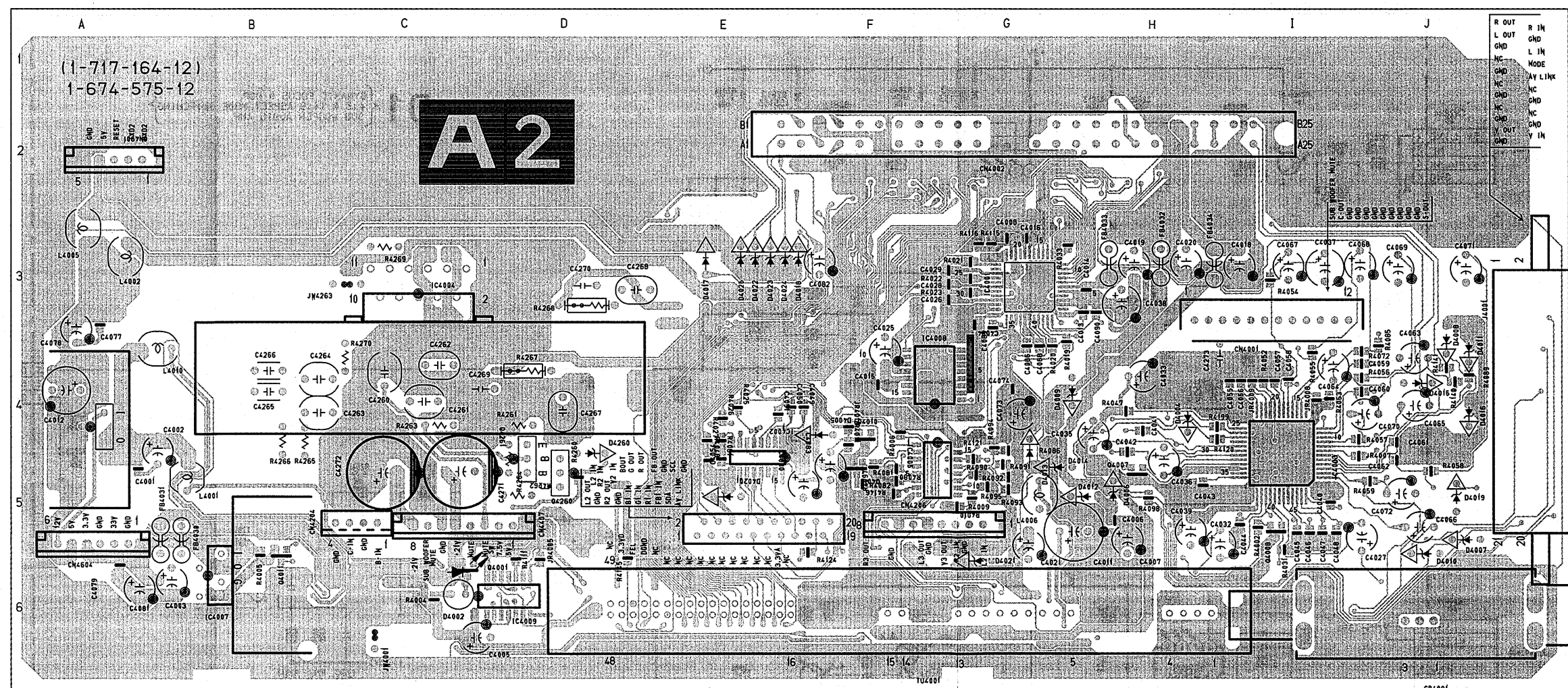




A2

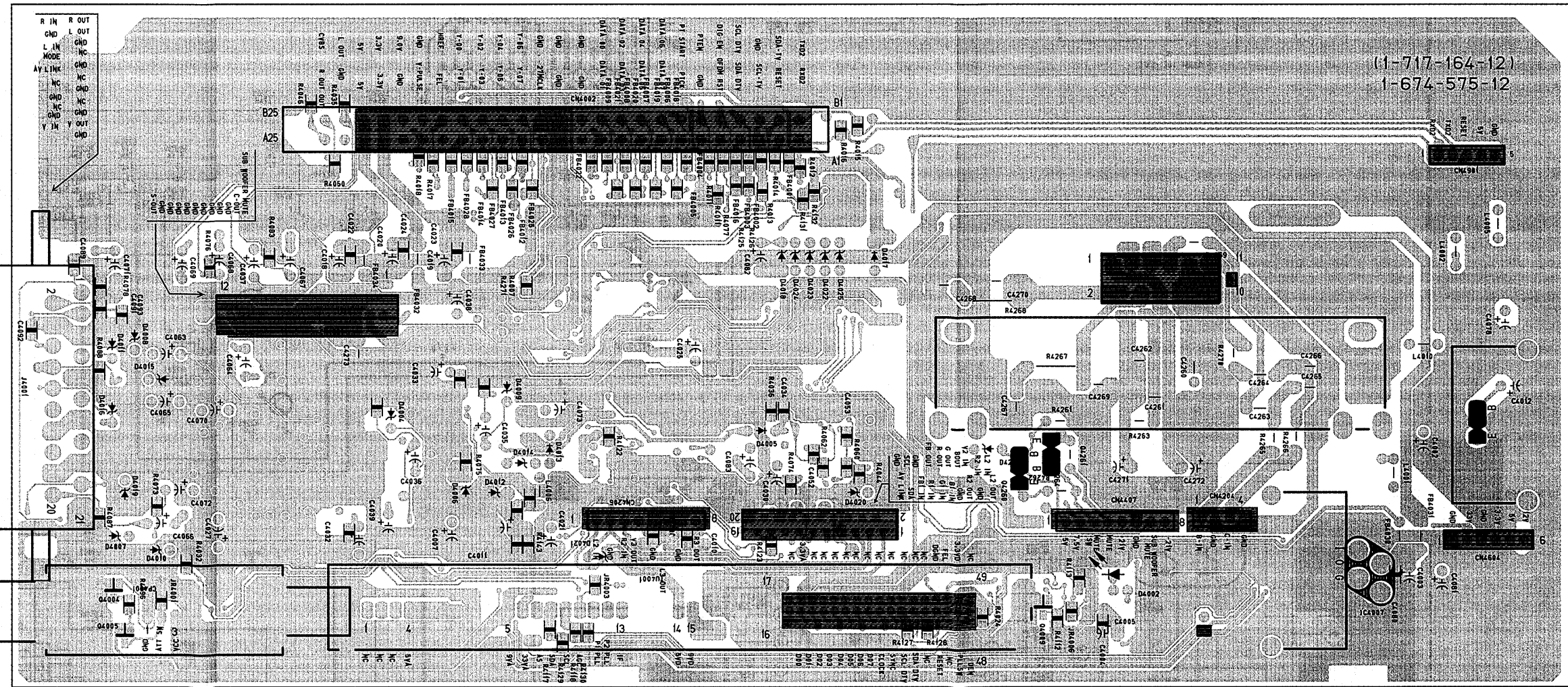
DIGITAL INTERFACE DOLBY
CENTRE AND SURROUND AMPLIFIER

A2 Board



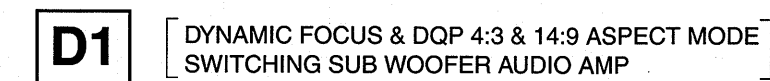
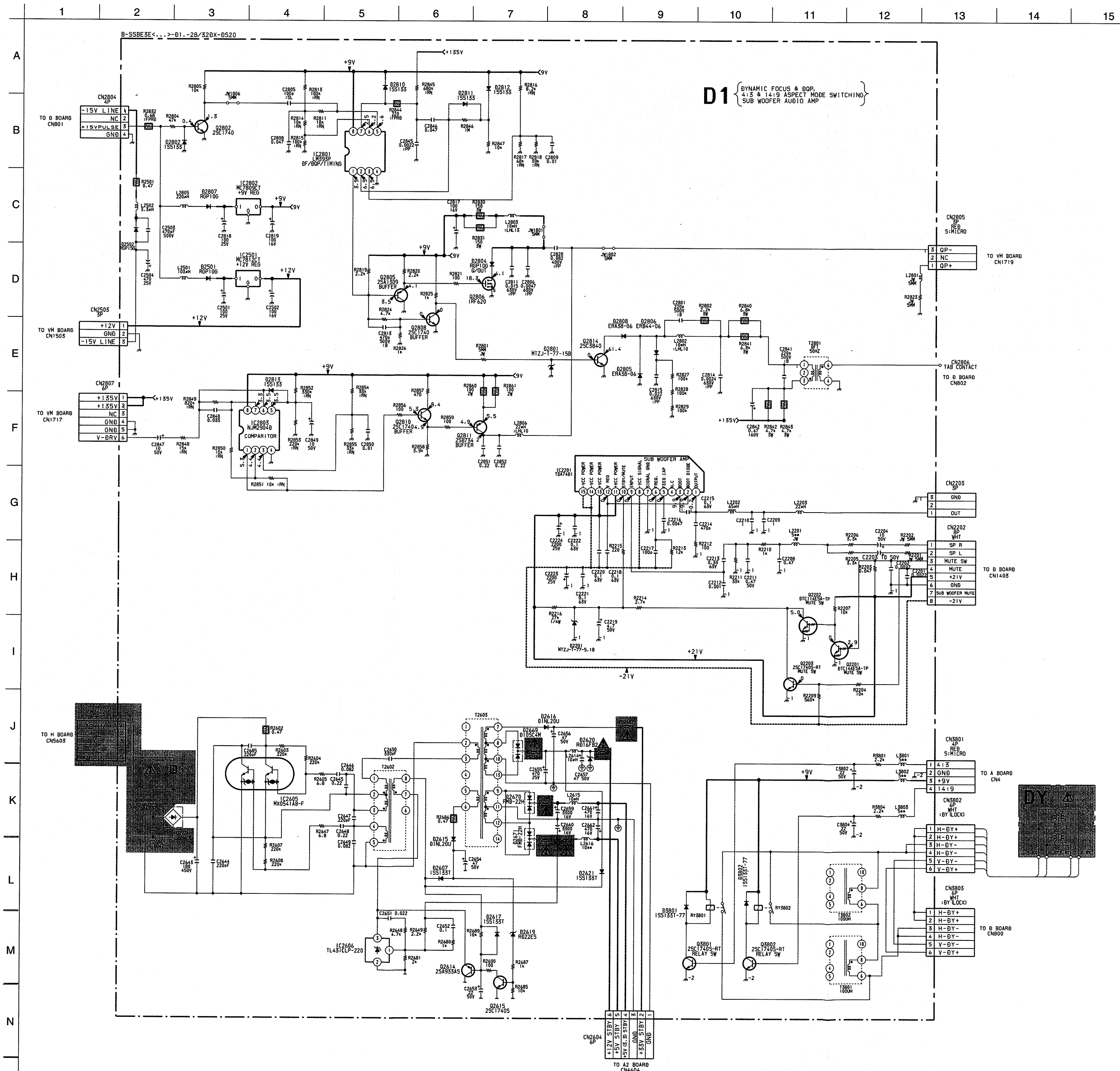
A2 Board Location

IC	DIODE
IC4001 C-7	D4002 D-4
IC4002 D-5	D4004 C-8
IC4003 D-9	D4005 C-5
IC4004 C-3	D4006 D-7
IC4005 D-6	D4007 D-10
IC4006 C-1	D4008 C-9
IC4007 D-2	D4009 C-7
IC4008 C-6	D4010 D-9
IC4009 E-4	D4011 C-10
TRANSISTOR	D4072 D-7
Q4001 D-4	D4013 D-7
Q4004 I-2	D4014 D-7
Q4005 I-2	D4015 C-9
Q4007 C-8	D4017 B-5
Q4008 D-8	D4018 B-10
Q4009 I-7	D4019 D-10
Q4010 D-6	D4260 D-4
Q4011 D-2	
Q4080 D-4	
Q4261 D-4	

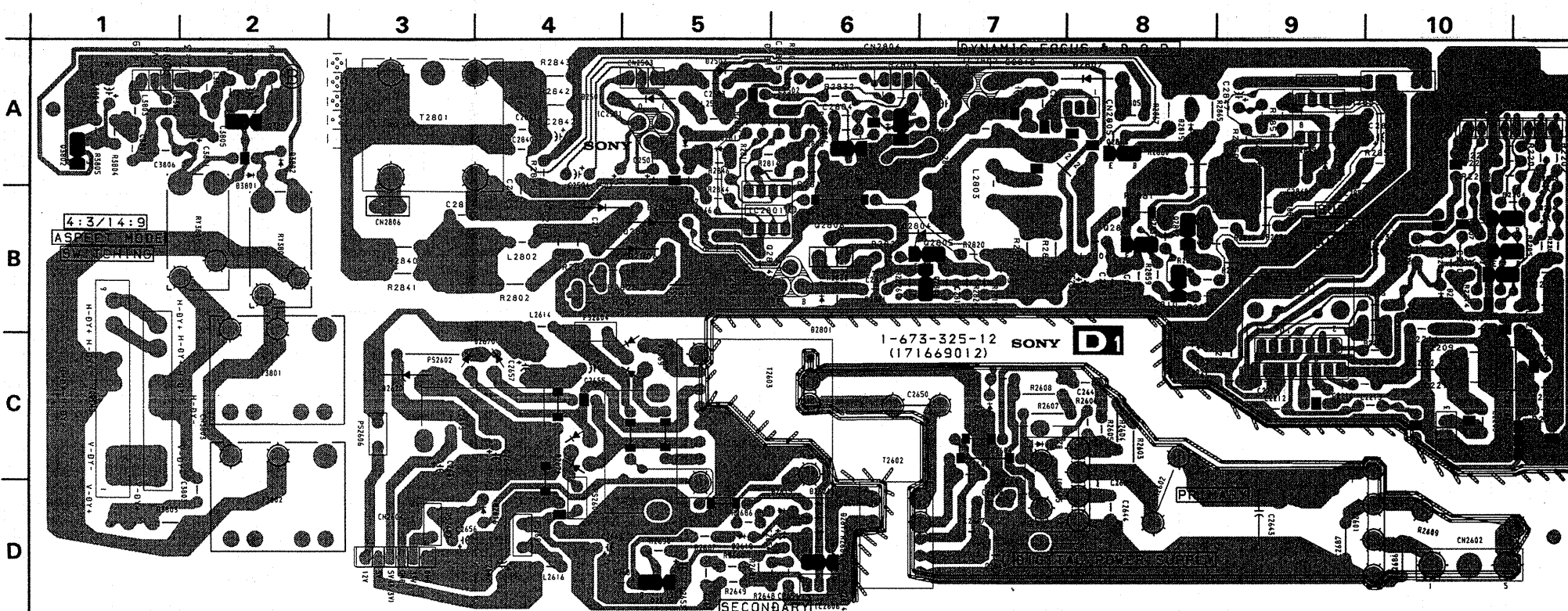


A2 Board Mark

Ref	28DS20U	32DS20U	28DX20U	32DX20U
C4261	0.47MF	0.47MF	-	-
C4262	0.1MF	0.1MF	-	-
C4263	0.47MF	0.47MF	-	-
C4264	0.47MF	0.47MF	-	-
C4265	0.0022MF	0.0022MF	-	-
C4266	0.0022MF	0.0022MF	-	-
C4267	0.22MF	0.22MF	-	-
C4268	0.22MF	0.22MF	-	-
C4271	1000MF	1000MF	-	-
C4272	1000MF	1000MF	-	-
C4273	0.0022MF	0.0022MF	-	-
CN4001	CONNECTOR 12P	CONNECTOR 12P	-	-
CN4004	CONNECTOR 4P	CONNECTOR 4P	-	-
CN4007	CONNECTOR 8P	CONNECTOR 8P	-	-
D4260	RD3.9ESB2	RD3.9ESB2	-	-
IC4004	TD47284A	TD47284A	-	-
Q4260	DTC143TSA-TP	DTC143TSA-TP	-	-
Q4261	2SC2765-HFE	2SC2765-HFE	-	-
R4260	SHORT 0	SHORT 0	-	-
R4261	470	470	-	-
R4262	2.2K	2.2K	-	-
R4263	27K	27K	-	-
R4264	4.7K	4.7K	-	-
R4265	22K	22K	-	-
R4266	3.9K	3.9K	-	-
R4267	4.7	4.7	-	-
R4268	4.7	4.7	-	-
R4269	JWIS.0MM	JWIS.0MM	-	-
R4270	JWIS.0MM	JWIS.0MM	-	-



D1 Board



D1 Board Location

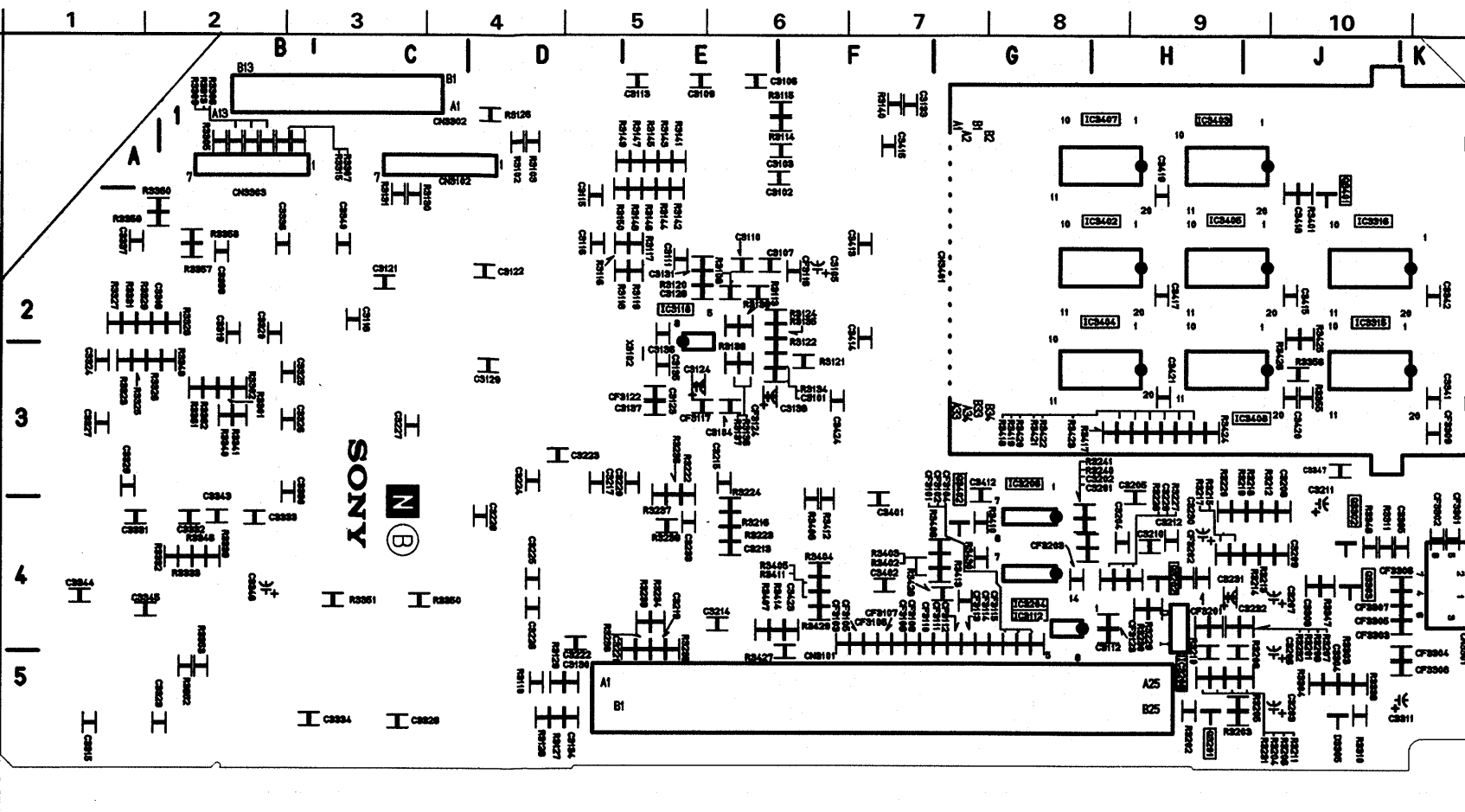
	IC	D2601	D-10
C2201	B-9	D2607	D-6
IC2501	A-5	D2615	D-5
IC2801	A-5	D2616	D-4
IC2802	A-7	D2617	D-6
IC2803	A-9	D2619	D-5
TRANSISTOR		D2620	C-6
C2201	B-10	D2621	D-4
C2202	B-10	D2629	D-6
C2203	B-10	D2670	C-3
D2802	A-6	D2671	C-4
D2805	B-6	D2802	B-6
D2806	B-6	D2802	F-5
D2808	B-6	D2804	B-7
D2810	B-8	D2805	B-4
D2811	B-8	D2806	B-5
D2814	B-6	D2807	E-4
D3801	A-2	D2808	B-6
D3810	D-10	D2811	C-5
DIODE		D2811	D-11
D2201	B-10	D2812	A-5
D2501	A-5	D2813	F-2
D2502	A-5	D3801	A-2
D2801	B-6	D3802	A-2

N Board Location

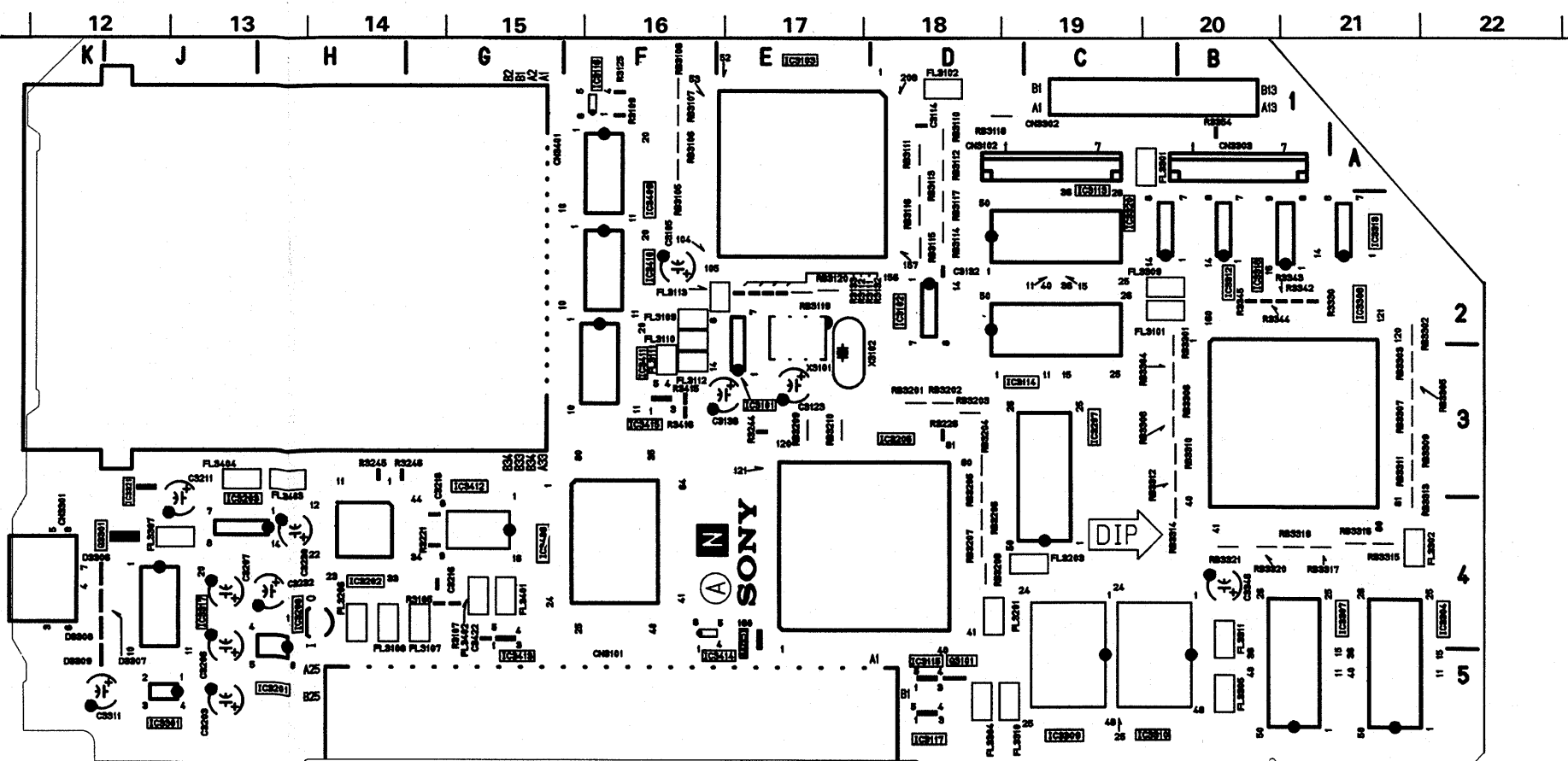
IC301	C-18	IC3020	B-20
IC3012	IC-18	IC3021	D-12
IC3012	B-19	IC3042	B-8
IC3013	A-18	IC3043	A-9
IC3012	E-18	IC3046	C-9
IC3014	C-18	IC3047	C-9
IC3014	C-18	IC3048	G-187
IC3016	A-18	IC3047	B-17
IC3017	E-18	IC3048	C-9
IC3018	C-8	IC3049	B-17
IC3201	E-14	IC3410	B-17
IC3202	D-15	IC3411	C-17
IC3203	D-15	IC3412	C-17
IC3204	D-15	IC3413	E-17
IC3205	C-18	IC3415	E-17
TRANSISTOR			
IC2605	D-18	Q3101	E-19
IC2606	D-18	Q3201	E-9
IC2607	D-20	Q3202	D-9
IC2608	E-18	Q3202	D-9
IC3301	E-13	Q3301	D-13
IC3304	E-22	Q3302	D-10
IC3305	E-22	Q3303	D-10
IC3306	B-22	Q3401	A-10
IC3309	E-21	Q3402	D-7
IC3310	E-21	DIODE	
IC3312	B-22		
IC3313	B-22	D3305	E-10
IC3315	E-19	D3306	D-13
IC3316	E-19	D3307	D-13
IC3317	E-19	D3308	E-13
IC3318	C-10	D3309	E-13

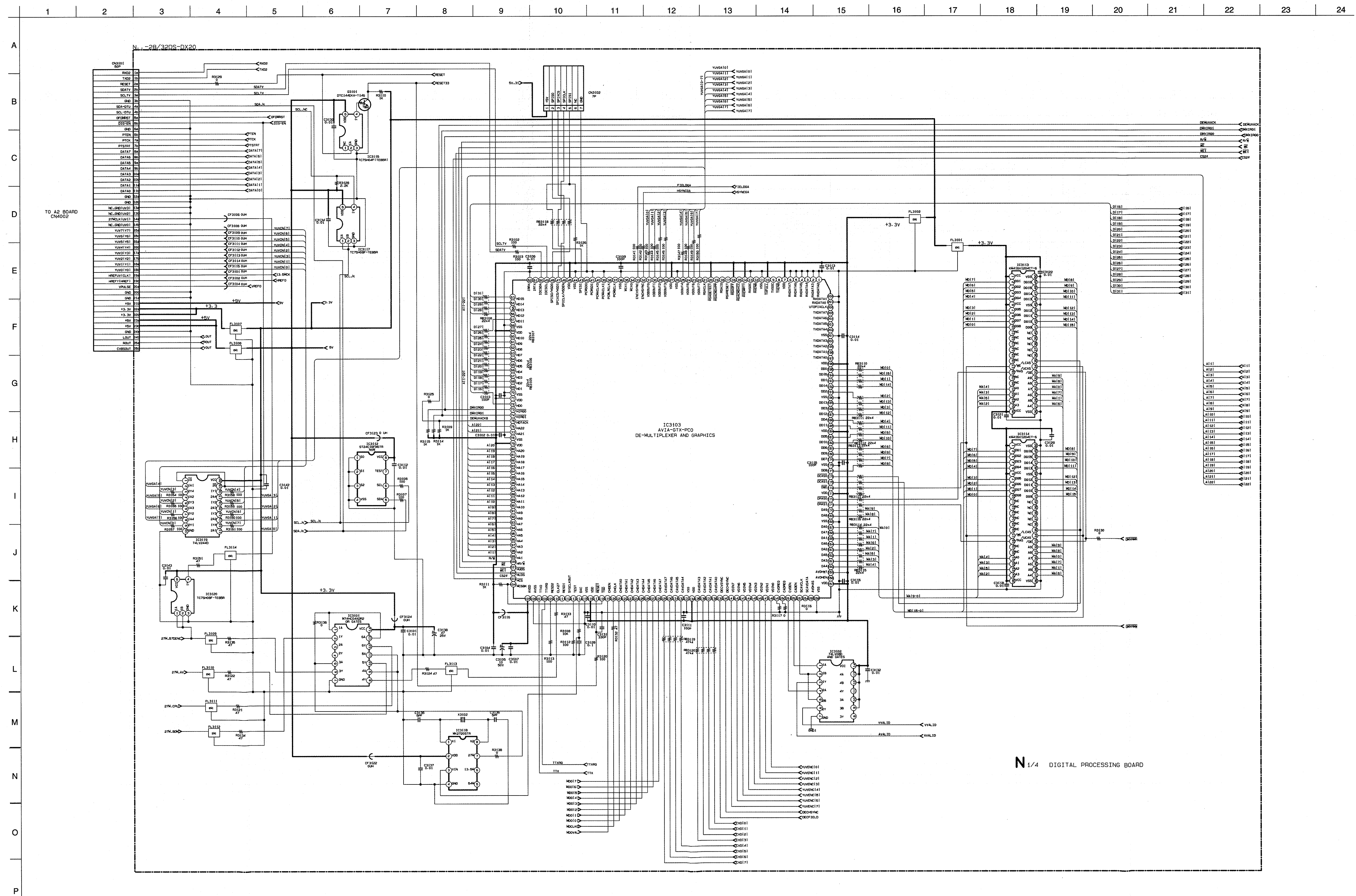


N Board <Conductor Side>



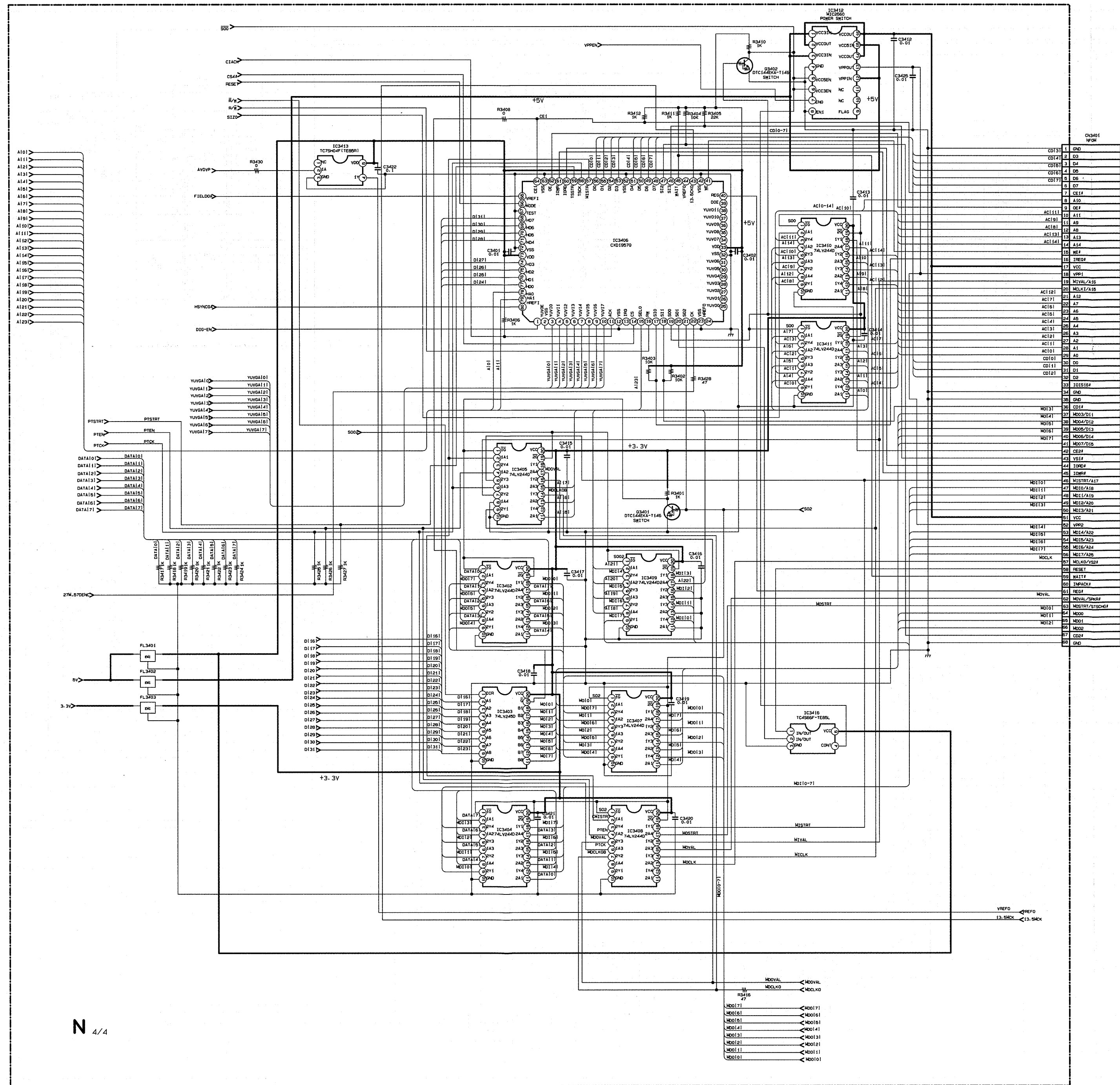
N Board <Component Side>







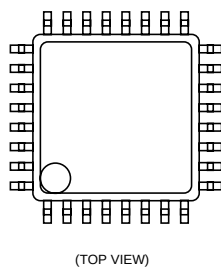




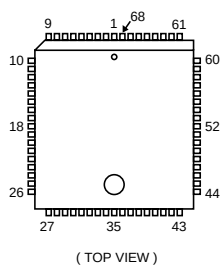
N. -28/3205-DX20

5-4. SEMICONDUCTORS

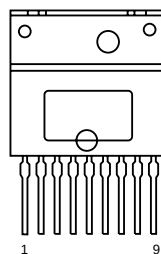
CXA2040Q-T4



MSP3410D-PS-B4-T



STR-S6709

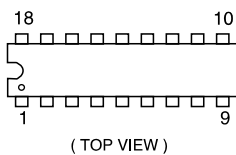


TLP721(D4-)

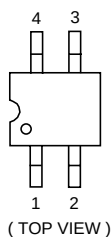


2SA733-K
2SA933AS
2SA933S

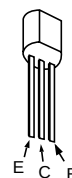
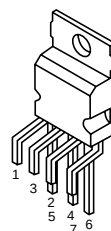
CXA8070P



PST593C-MMP-4P

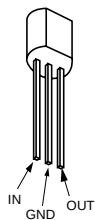


STV9379

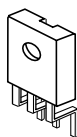


DTA144ES
DTC114ES
DTC143TS
DTC144ESA
2SC1740S-RT

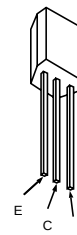
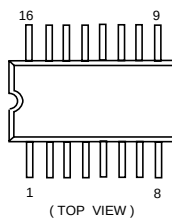
LM78L05ACZ



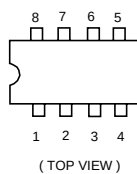
SBX1981-51



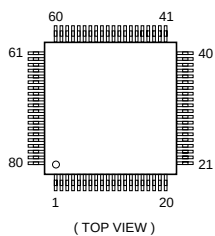
TDA4665T-T



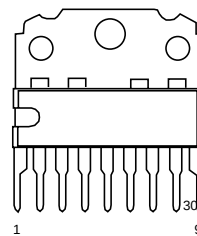
LM393P
M5216P
TDA2822M
TNY253P
 μ PC393C



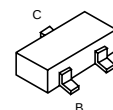
SDA5273-3CP-C55-22-GEG
SDA3OC263-GEG



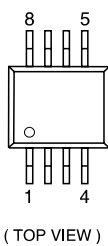
TDA6101Q/N3



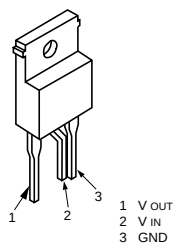
DTC144TK
DTC144EKA
2SA1037K
2SA1162-G
2SC1623-L5L6
2SC2412K



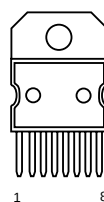
M24C332-MW6T



SE135N



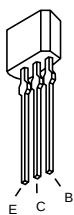
TDA7264



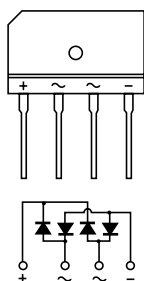
IRF620



2SC2785-HFE



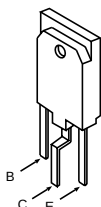
D4SB60L



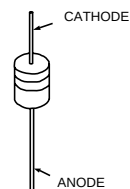
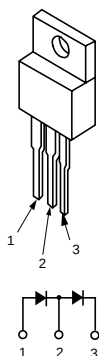
ERA38-06TP1
HZS9.INB2
MTZJ-3.6A
MTZJ-T-77-3.6B
MTZJ-T-77-3.9B
MTZJ-5.1B
MTZJ-5.6B
MTZJ-6.8B
MTZJ-9.1
MTZJ-T-77-9.1B
MTZJ-77-22B

MTZJ-T-77-33C
RD3.9ESB2
RD5.1ESB2
RD5.6ESB2
RD6.8ESB2
RD10ESB2
RD15ES-B2
RD39ES-B2
ISS119-25TD
1SS133T-77

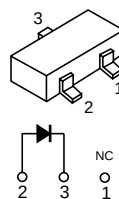
2SC4927-01



FMS-3FU

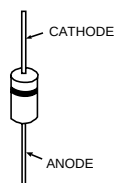


MA3030-H (TX)
MA3130WA-TX

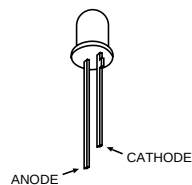


DINL20U
EG-1Z-V1
EGP20G
EL1Z
EM1-V1
EU2A
EU2-V1
FML-G12S
GP08D

HSS83TD
RGP10GPKG23
RGP15GPKG23

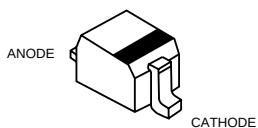


SLA-570KT3F



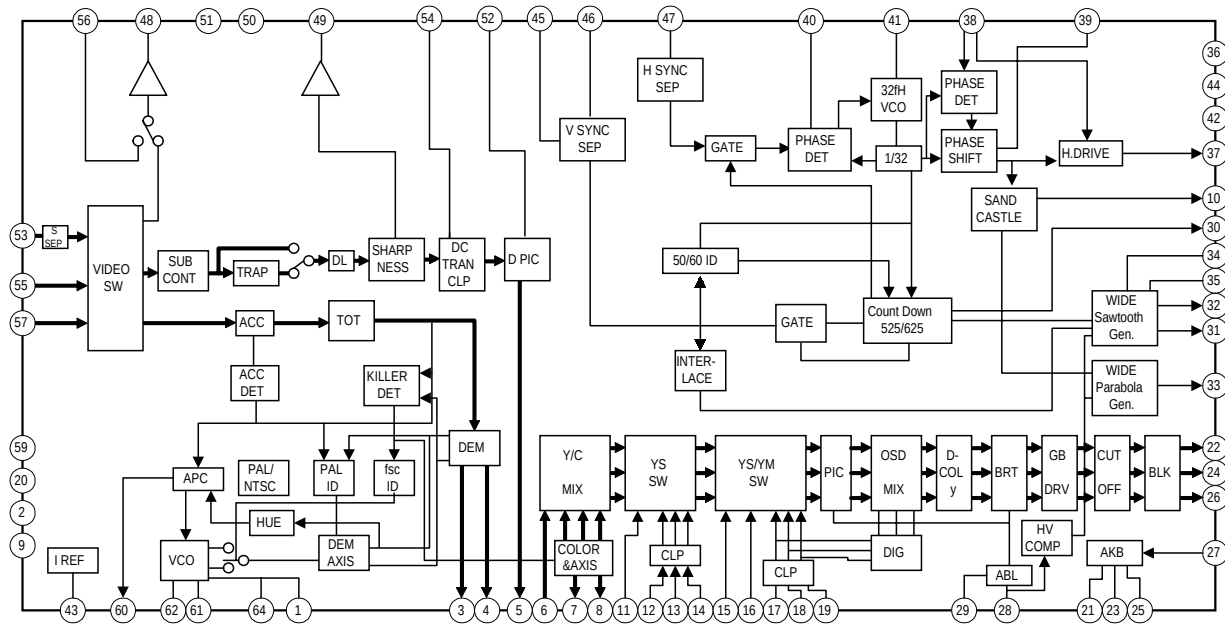
BAS216
DTZ6.8C
DTZ9.1
DTZ33B
RD5.65-B
MA8330

1SS355TE-17
UDZ-TE-17-5.1B
UDZ-TE-17-6.8B
UDZ-TE-17-5.6B
HDZ-TE-17-6.8B
UDZ-TE-17-9.1B

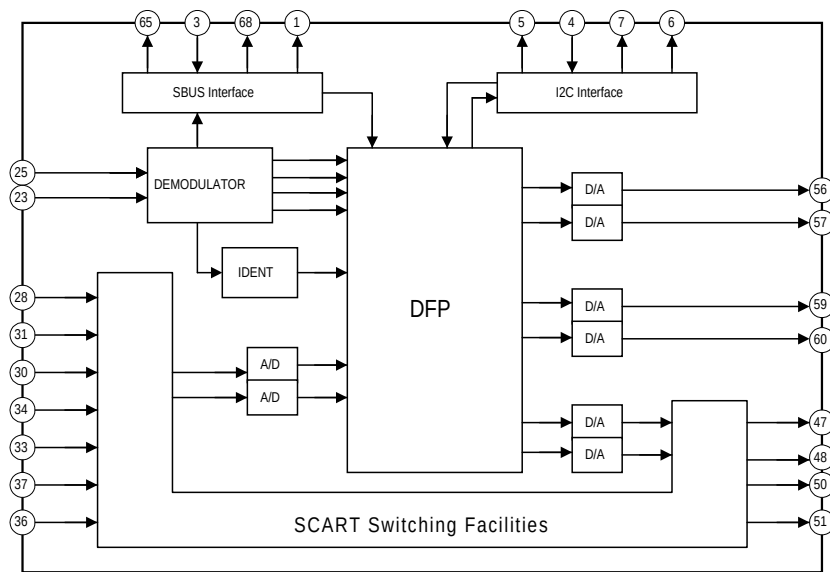


5-5. IC BLOCK DIAGRAMS (1)

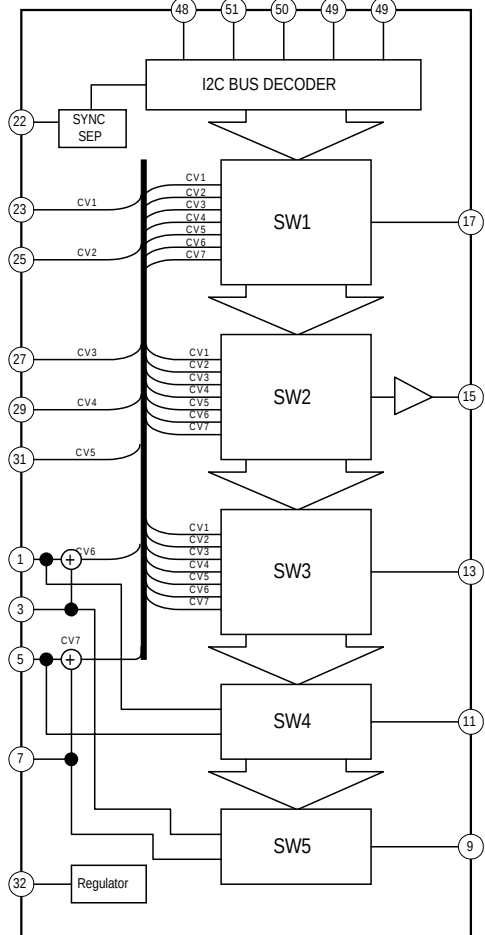
A BOARD IC301 CXA2076Q-TL



A BOARD IC202 MSP3410D

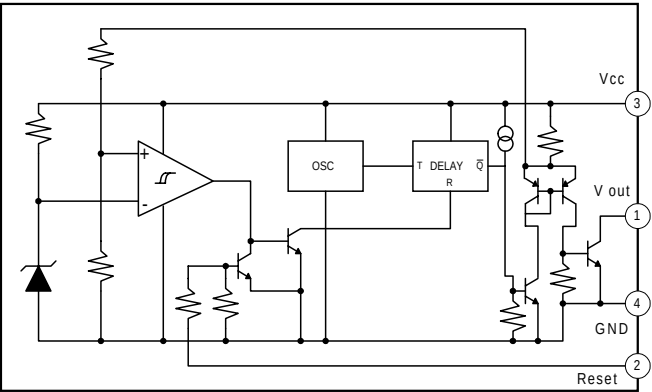


A BOARD IC201 CXA2040AQ

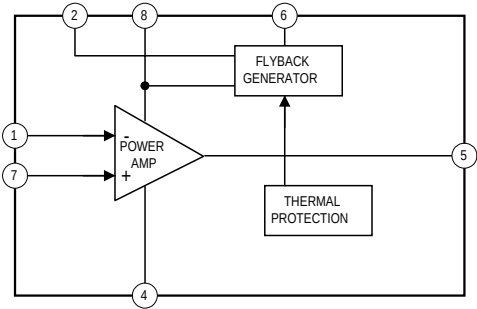


5-5. IC BLOCK DIAGRAMS (2)

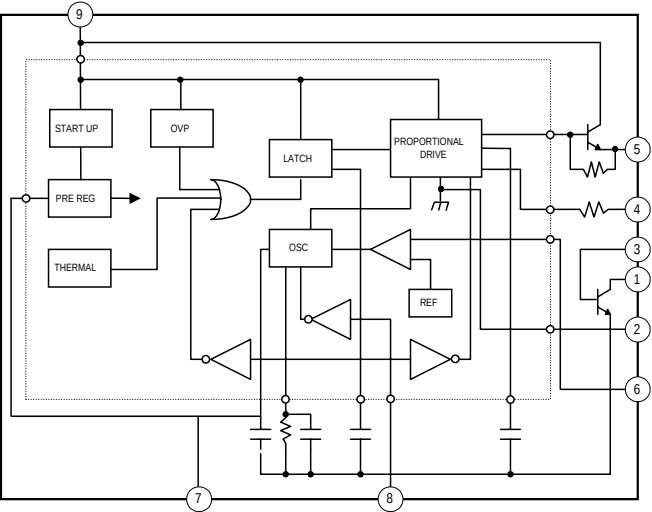
A BOARD IC4 PST593C



D BOARD IC500 STV9379



D BOARD IC600 STR-S6709



SECTION 6 EXPLODED VIEWS

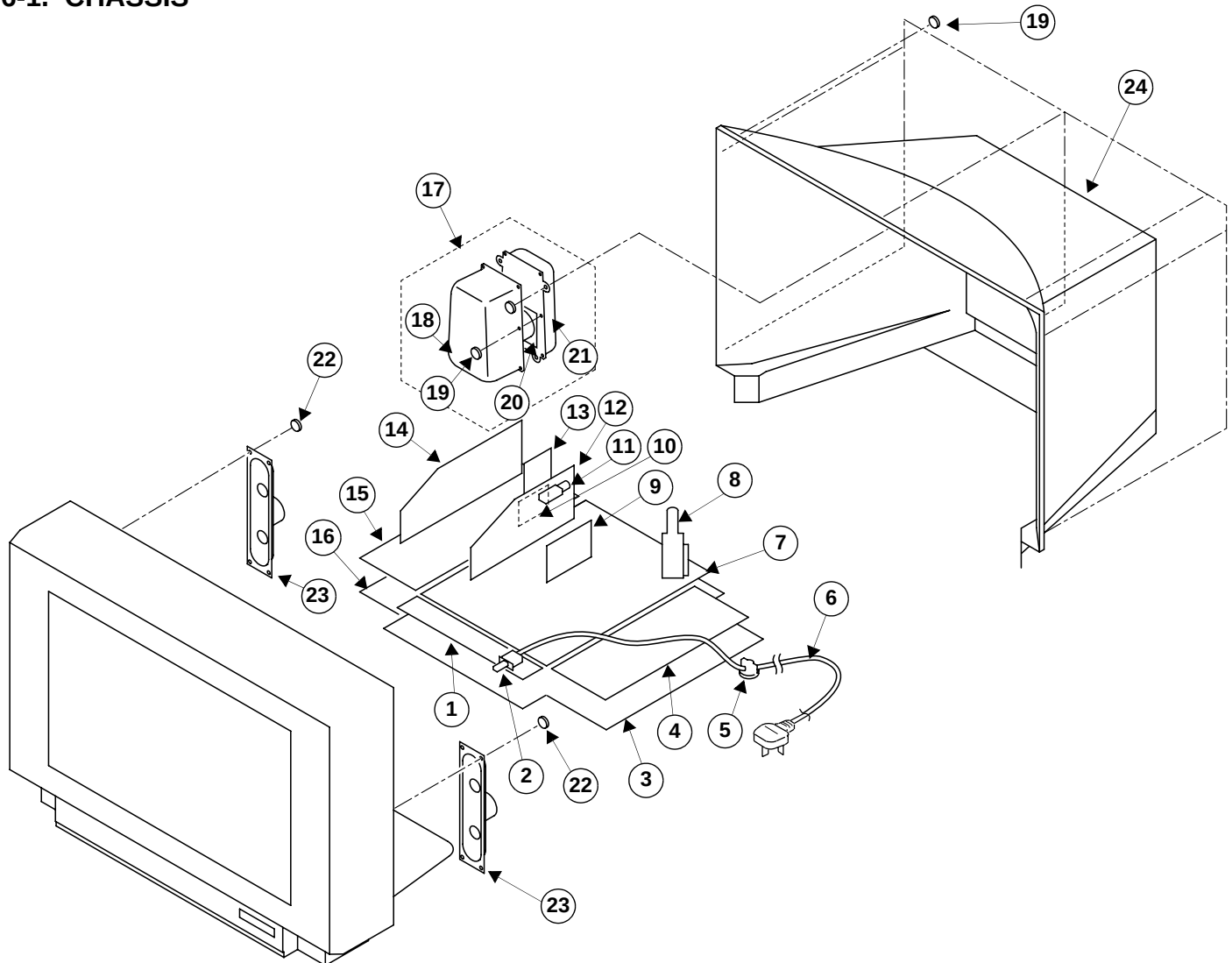
Note : Les composants identifiés par une trame et par une marque Δ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces du numéro spécifié.

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

NOTE :

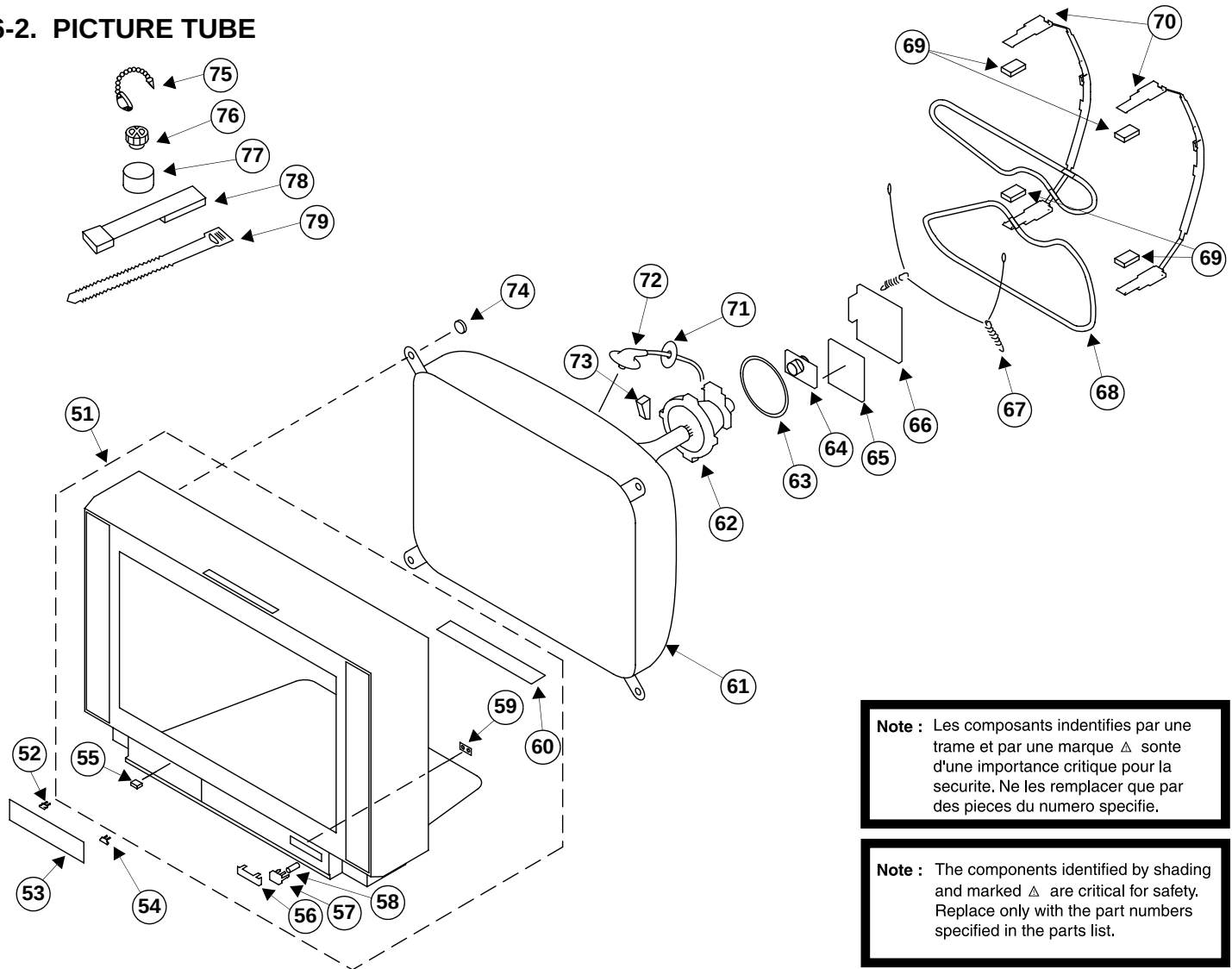
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1. CHASSIS



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
1	*A-1647-029-A	H BOARD, COMPLETE		13	*A-1651-115-A	J BOARD, COMPLETE (KV-28DS20U/32DS20U)	
2	Δ 1-571-433-21	SWITCH, PUSH (AC POWER)		14	*A-1652-067-A	N BOARD, COMPLETE	
3	*4-204-752-01	BRACKET, MAIN		15	*A-1632-853-A	A2 BOARD, COMPLETE (KV-28DS20U/32DS20U)	
4	*A-1642-259-A	D1 BOARD, COMPLETE			*A-1631-052-A	A2 BOARD, COMPLETE (KV-28DX20U/32DX20U)	
5	*4-202-531-01	AC CORD LOCK (SC)		16	*4-204-751-01	BRACKET, A2	
6	Δ 1-776-204-12	CORD POWER (FILTER)		17	*A-1674-139-A	SP BLOCK ASSY	18-21
7	*A-1642-253-A	D BOARD, COMPLETE (KV-28DS20U/28DX20U)		18	*4-204-776-11	BOX, WOOFER	
	*A-1642-252-A	D BOARD, COMPLETE (KV-32DS20U/32DX20U)		19	4-039-358-01	SCREW (4x16), (+) BV TAPPING	
8	Δ X-4560-158-1	TRANSFORMER ASSY, FLYBACK (NX-4404/U2B4)		20	1-529-417-11	SUB WOOFER SPEAKER (8CM)	
9	*A-1642-254-A	D2 BOARD, COMPLETE (KV-28DS20U/28DX20U)		21	*4-204-775-11	BAFFLE WOOFER	
	*A-1642-251-A	D2 BOARD, COMPLETE (KV-32DS20U/32DX20U)		22	4-384-096-01	SCREW (4x16), TAPPING + P	
10	*A-1630-490-A	A1 BOARD, COMPLETE (KV-28DS20U/32DS20U)		23	1-529-408-11	SPEAKER (4.2x24CM)	
11	1-693-339-11	TUNER/VIF (UK)		24	4-204-733-21	COVER, REAR (KV-28DS20U/28DX20U)	
12	*A-1632-854-A	A BOARD, COMPLETE (KV-28DS20U/32DS20U)			4-204-735-11	COVER, REAR (KV-32DS20U/32DX20U)	
	*A-1632-852-A	A BOARD, COMPLETE (KV-28DX20U/32DX20U)					

6-2. PICTURE TUBE

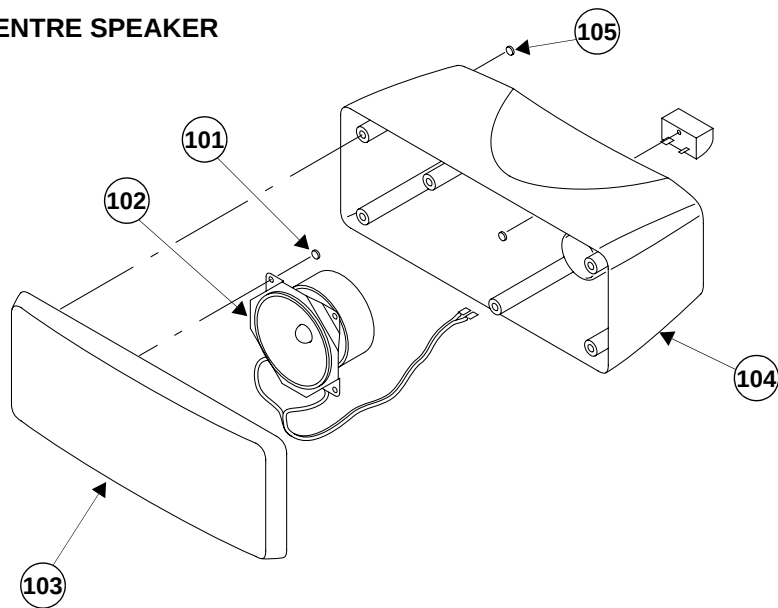


REF. NO.	PART.NO	DESCRIPTION	REMARK
51	X-4200-470-2	BEZNET ASSY (KV-28DS20U/28DX20U)	55-59
	X-4200-488-2	BEZNET ASSY (KV-32DS20U/32DX20U)	55-60
52	4-045-250-01	DAMPER	
53	4-204-731-31	DOOR (KV-28DS20U/32DS20U)	
	4-204-731-21	DOOR (KV-28DX20U/32DX20U)	
54	4-202-555-01	SHAFT DOOR	
55	4-042-192-11	CATCHER, PUSH	
56	4-204-730-11	WINDOW ORNAMENTAL	
57	4-204-728-01	BUTTON, POWER	
58	4-202-964-11	SPRING	
59	4-204-729-01	GUIDE LIGHT	
60	4-204-058-41	SHEET, BLOTTING (KV-32DS20U/32DX20U)	
61	Δ 8-737-786-05	PICTURE TUBE (W66LLX060X) SD-299 (KV-28DS20U/28DX20U)	
	Δ 8-735-054-05	PICTURE TUBE (W76LLZ060X) SD-302 (KV-32DS20U/32DX20U)	
62	Δ 1-451-481-11	DEFLECTION YOKE (Y28RVC2) (KV-28DS20U/28DX20U)	

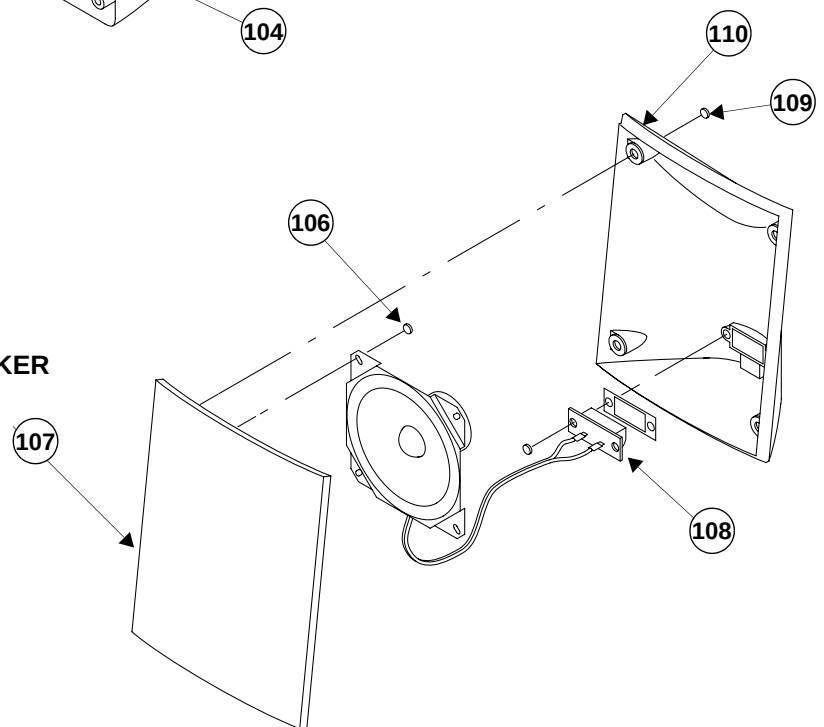
REF. NO.	PART.NO	DESCRIPTION	REMARK
	Δ 1-451-480-11	DEFLECTION YOKE (Y32RVC2) (KV-32DS20U/32DX20U)	
63	1-452-896-11	COIL, NA ROTATION (RT200)	
64	Δ 8-453-011-11	NECK ASSY, NA299-M	
65	*A-1644-098-A	VM BOARD, COMPLETE	
66	*A-1638-126-A	C BOARD, COMPLETE	
67	4-200-433-01	SPRING, EXTENSION	
68	Δ 1-416-466-11	COIL, DEMAGNETIC (KV-28DS20U/28DX20U)	
	Δ 1-416-769-11	COIL, DEMAGNETIC (KV-32DS20U/32DX20U)	
69	*4-203-390-01	CUSHION DGC	
70	*4-057-303-01	HOLDER, DGC	
71	4-202-554-01	HOLDER, HV CABLE	
72	Δ 1-251-807-11	CAP ASSY, HIGH VOLTAGE	
73	3-704-495-01	SPACER, DY	
74	4-036-188-01	SCREW, SELF TAPPING (KV-28DS20U/28DX20U)	
	4-204-225-01	PT SCREW (KV-32DS20U/32DX20U)	
75	4-308-870-00	CLIP, LEAD WIRE	
76	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
77	1-425-032-00	MAGNET, DISK; 10MM Ø	
78	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
79	3-701-007-00	BAND, BINDING	

6-3. CENTRE SPEAKER AND SURROUND SPEAKER (KV-28DS20U/32DS20U only)

CENTRE SPEAKER



SURROUND SPEAKER



REF. NO.	PART.NO	DESCRIPTION	REMARK	REF. NO.	PART.NO	DESCRIPTION	REMARK
101	7-685-659-79	SCREW (4x8)					
102	1-504-783-11	SPEAKER (8CM)					
103	X-494-575-81	PANEL ASSY, FRONT					
104	X-494-575-71	CABINET ASSY, SPEAKER					
105	4-929-125-01	SCREW (4x16)					
106	4-960-366-01	SCREW (3.5x9.5)					
107	X-494-641-31	FRAME ASSY, GRILLE					
108	1-537-763-11	TERMINAL BOARD					
109	4-979-187-01	SCREW (4.2x13)					
110	4-977-191-01	CABINET, SPEAKER					

SECTION 7 ELECTRICAL PARTS LIST

PARTS LISTING TABLE OF CONTENTS

	<u>Page</u>
A1 BOARD COMPLETE Parts List : (KV-28DS20U/32DS20U only)	113
A2 BOARD COMMON Parts List : Parts common to all models listed in this manual	114
A2 BOARD VARIANT Parts List : Parts that belong only to the model specified	
<u>Model</u>	
KV-28DS20U/32DS20U	117
A BOARD COMMON Parts List : Parts common to all models listed in this manual	117
A BOARD VARIANT Parts List : Parts that belong only to the model specified	
<u>Model</u>	
KV-28DS20U/32DS20U	123
KV-28DX20U/32DX20U	123
C BOARD COMPLETE Parts List :	124
D2 BOARD COMMON Parts List : Parts common to all models listed in this manual	125
D2 BOARD VARIANT Parts List : Parts that belong only to the model specified	
<u>Model</u>	
KV-28DS20U/28DX20U	125
KV-32DS20U/32DX20U	125
D BOARD COMMON Parts List : Parts common to all models listed in this manual	125
D BOARD VARIANT Parts List : Parts that belong only to the model specified	
<u>Model</u>	
KV-28DS20U/28DX20U	129
KV-32DS20U/32DX20U	130
D1 BOARD COMPLETE Parts List :	130
VM BOARD COMPLETE Parts List :	133
H BOARD COMPLETE Parts List :	135
J BOARD COMPLETE Parts List : (KV-28DS20U/32DS20U only)	136
N BOARD COMPLETE Parts List :	136
MISCELLANEOUS :	141
ACCESSORIES AND PACKAGING MATERIALS :	141

Note : Refer to the designated variant parts list when seeking a part indicated by an asterisk (*)

Parts indicated (#) on the Schematic Diagram are not used in this model and therefore do not appear in the Parts List.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
*A-1630-490-A A1 Board, Complete (KV-28DS20U/32DS20U only)				< DIODE >			
	< CAPACITOR >			D1201	8-719-988-61	DIODE 1SS355TE-17	
				D1203	8-719-976-99	DIODE DTZ5.1B	
				< IC >			
C1201	1-164-695-11	CERAMIC CHIP 0.0022MF	5% 50V	IC1201	8-759-377-62	IC DSP56004-FJ66R2	
C1202	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC1202	8-759-527-14	IC KM62256DLG-7T	
C1203	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC1203	8-759-384-64	IC TDA1387T/N1/T3	
C1204	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC1204	8-759-384-64	IC TDA1387T/N1/T3	
C1205	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC1205	8-759-387-76	IC TL072CDR	
C1206	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC1206	8-759-387-76	IC TL072CDR	
C1207	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC1207	8-759-991-41	IC LM78L05ACZ	
C1208	1-163-038-00	CERAMIC CHIP 0.1MF	25V	< COIL >			
C1209	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L1204	1-216-295-00	SHORT	0
C1210	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L1205	1-216-295-00	SHORT	0
C1211	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L1206	1-216-295-00	SHORT	0
C1212	1-126-933-11	ELECT 100MF	20% 16V	L1207	1-410-989-11	INDUCTOR CHIP	0.47UH
C1213	1-164-700-11	CERAMIC CHIP 0.68MF	16V	L1208	1-216-295-00	SHORT	0
C1215	1-104-664-11	ELECT 47MF	20% 16V	L1209	1-216-295-00	SHORT	0
C1216	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L1210	1-216-295-00	SHORT	0
C1217	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L1211	1-216-295-00	SHORT	0
C1218	1-126-964-11	ELECT 10MF	20% 50V	L1212	1-216-295-00	SHORT	0
C1219	1-104-664-11	ELECT 47MF	20% 16V	L1213	1-410-989-11	INDUCTOR CHIP	0.47UH
C1220	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	L1220	1-410-989-11	INDUCTOR CHIP	0.47UH
C1221	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	L1221	1-410-989-11	INDUCTOR CHIP	0.47UH
C1222	1-163-038-00	CERAMIC CHIP 0.1MF	25V	< TRANSISTOR >			
C1223	1-104-664-11	ELECT 47MF	20% 16V	Q1201	8-729-027-44	TRANSISTOR DTC114TKA-T146	
C1224	1-104-664-11	ELECT 47MF	20% 16V	< RESISTOR >			
C1225	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R1202	1-216-025-00	RES,CHIP	100 5% 1/10W
C1226	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R1204	1-216-025-00	RES,CHIP	100 5% 1/10W
C1227	1-126-964-11	ELECT 10MF	20% 50V	R1205	1-216-025-00	RES,CHIP	100 5% 1/10W
C1228	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	R1206	1-216-065-00	RES,CHIP	4.7K 5% 1/10W
C1229	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	R1207	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1230	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R1208	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1231	1-104-664-11	ELECT 47MF	20% 16V	R1209	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1232	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R1210	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1233	1-104-664-11	ELECT 47MF	20% 16V	R1211	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1236	1-104-664-11	ELECT 47MF	20% 16V	R1212	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1237	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R1213	1-216-073-00	RES,CHIP	10K 5% 1/10W
C1238	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R1214	1-216-081-00	RES,CHIP	22K 5% 1/10W
	< CONNECTOR >			R1215	1-216-081-00	RES,CHIP	22K 5% 1/10W
CN1202	1-766-929-11	CONNECTOR, BOARD TO BOARD 8P		R1216	1-216-295-00	SHORT	0
CN1203	1-766-929-11	CONNECTOR, BOARD TO BOARD 8P		R1217	1-216-295-00	SHORT	0
CN1204	*1-564-519-11	PLUG, CONNECTOR 4P					

A1

A2

REF.NO.	PART.NO	DESCRIPTION	REMARK
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R1218	1-216-295-00	SHORT	0
R1219	1-216-295-00	SHORT	0
R1220	1-216-001-00	RES,CHIP	10 5% 1/10W
R1221	1-216-065-00	RES,CHIP	4.7K 5% 1/10W
R1222	1-216-065-00	RES,CHIP	4.7K 5% 1/10W

R1223	1-216-063-91	RES,CHIP	3.9K 5% 1/10W
R1224	1-216-061-00	RES,CHIP	3.3K 5% 1/10W
R1225	1-216-025-00	RES,CHIP	100 5% 1/10W
R1226	1-216-061-00	RES,CHIP	3.3K 5% 1/10W
R1227	1-216-063-91	RES,CHIP	3.9K 5% 1/10W

R1228	1-216-025-00	RES,CHIP	100 5% 1/10W
R1229	1-216-001-00	RES,CHIP	10 5% 1/10W
R1230	1-216-063-91	RES,CHIP	3.9K 5% 1/10W
R1231	1-216-061-00	RES,CHIP	3.3K 5% 1/10W
R1232	1-216-025-00	RES,CHIP	100 5% 1/10W

R1233	1-216-061-00	RES,CHIP	3.3K 5% 1/10W
R1234	1-216-063-91	RES,CHIP	3.9K 5% 1/10W
R1235	1-216-025-00	RES,CHIP	100 5% 1/10W
R1236	1-216-025-00	RES,CHIP	100 5% 1/10W
R1237	1-216-025-00	RES,CHIP	100 5% 1/10W

R1238	1-216-025-00	RES,CHIP	100 5% 1/10W
R1239	1-216-025-00	RES,CHIP	100 5% 1/10W
R1240	1-216-295-00	SHORT	0

***A-1632-853-A A2 Board, Complete**
(KV-28DS20U/32DS20U)

***A-1631-052-A A2 Board, Complete**
(KV-28DX20U/32DX20U)

A2 Board Common Parts

< CAPACITOR >

C4001	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4002	1-126-933-11	ELECT	100MF	20%	16V
C4003	1-126-933-11	ELECT	100MF	20%	16V
C4004	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4005	1-126-933-11	ELECT	100MF	20%	16V
C4006	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4007	1-126-933-11	ELECT	100MF	20%	16V
C4008	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4009	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4010	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4011	1-126-966-11	ELECT	33MF	20%	50V
C4012	1-126-935-11	ELECT	470MF	20%	16V
C4014	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4015	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4016	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4018	1-126-933-11	ELECT	100MF	20%	16V

REF.NO.	PART.NO	DESCRIPTION	REMARK
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C4019	1-126-933-11	ELECT	100MF 20% 16V
C4020	1-126-933-11	ELECT	100MF 20% 16V
C4021	1-126-933-11	ELECT	100MF 20% 16V
C4022	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4023	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V

C4024	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4025	1-126-964-11	ELECT	10MF 20% 50V
C4026	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4027	1-126-964-11	ELECT	10MF 20% 50V
C4028	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V

C4029	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4030	1-126-933-11	ELECT	100MF 20% 16V
C4031	1-163-021-91	CERAMIC CHIP	0.01MF 10% 50V
C4032	1-126-964-11	ELECT	10MF 20% 50V
C4033	1-126-933-11	ELECT	100MF 20% 16V

C4034	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4035	1-126-964-11	ELECT	10MF 20% 50V
C4036	1-126-964-11	ELECT	10MF 20% 50V
C4039	1-126-964-11	ELECT	10MF 20% 50V
C4040	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V

C4041	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4042	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4043	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4044	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4045	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V

C4046	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4047	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4048	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4049	1-163-035-00	CERAMIC CHIP	0.047MF 50V
C4050	1-163-035-00	CERAMIC CHIP	0.047MF 50V

C4051	1-163-035-00	CERAMIC CHIP	0.047MF 50V
C4052	1-163-035-00	CERAMIC CHIP	0.047MF 50V
C4053	1-163-035-00	CERAMIC CHIP	0.047MF 50V
C4054	1-163-035-00	CERAMIC CHIP	0.047MF 50V
C4055	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V

C4056	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4057	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4058	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4059	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4060	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V

C4061	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4062	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V
C4063	1-126-959-11	ELECT	0.47MF 20% 50V
C4064	1-126-964-11	ELECT	10MF 20% 50V
C4065	1-126-959-11	ELECT	0.47MF 20% 50V

C4066	1-126-959-11	ELECT	0.47MF 20% 50V
C4067	1-126-959-11	ELECT	0.47MF 20% 50V

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C4068	1-126-960-11	ELECT 1MF	20% 50V	D4017	8-719-991-33	DIODE 1SS133T-77	
C4069	1-126-960-11	ELECT 1MF	20% 50V	D4018	8-719-109-85	DIODE RD5.1ESB2	
C4070	1-126-960-11	ELECT 1MF	20% 50V	D4019	8-719-923-60	DIODE MTZJ-T-77-9.1A	
C4071	1-126-960-11	ELECT 1MF	20% 50V	D4020	8-719-923-34	DIODE MTZJ-T-77-5.1B	
C4072	1-126-960-11	ELECT 1MF	20% 50V	D4021	8-719-923-34	DIODE MTZJ-T-77-5.1B	
C4073	1-126-933-11	ELECT 100MF	20% 16V	< FERRITE BEAD >			
C4074	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	FB4001	1-414-232-22	INDUCTOR CHIP 0UH	
C4077	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	FB4002	1-414-232-22	INDUCTOR CHIP 0UH	
C4078	1-126-933-11	ELECT 100MF	20% 16V	FB4003	1-414-232-22	INDUCTOR CHIP 0UH	
C4079	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	FB4004	1-414-232-22	INDUCTOR CHIP 0UH	
C4080	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	FB4005	1-414-232-22	INDUCTOR CHIP 0UH	
C4081	1-126-933-11	ELECT 100MF	20% 16V	FB4006	1-414-232-22	INDUCTOR CHIP 0UH	
C4082	1-137-375-91	FILM 0.068MF	5% 50V	FB4007	1-414-232-22	INDUCTOR CHIP 0UH	
C4084	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	FB4008	1-414-232-22	INDUCTOR CHIP 0UH	
C4085	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	FB4009	1-414-232-22	INDUCTOR CHIP 0UH	
C4086	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	FB4012	1-414-232-22	INDUCTOR CHIP 0UH	
C4088	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	FB4013	1-414-232-22	INDUCTOR CHIP 0UH	
C4089	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	FB4014	1-414-232-22	INDUCTOR CHIP 0UH	
C4091	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	FB4015	1-414-232-22	INDUCTOR CHIP 0UH	
C4092	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	FB4016	1-414-232-22	INDUCTOR CHIP 0UH	
C4093	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	FB4018	1-414-232-22	INDUCTOR CHIP 0UH	
< CONNECTOR >				FB4019	1-414-232-22	INDUCTOR CHIP 0UH	
CN4002	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P		FB4020	1-414-232-22	INDUCTOR CHIP 0UH	
CN4205	1-785-802-11	CONNECTOR, 20 PIN		FB4021	1-414-232-22	INDUCTOR CHIP 0UH	
CN4206	*1-564-511-11	PLUG, CONNECTOR 8P		FB4022	1-414-232-22	INDUCTOR CHIP 0UH	
CN4604	*1-564-509-11	PLUG, CONNECTOR 6P		FB4025	1-414-232-22	INDUCTOR CHIP 0UH	
CN4901	*1-564-508-11	PLUG, CONNECTOR 5P		FB4026	1-414-232-22	INDUCTOR CHIP 0UH	
< COMPOSITION CIRCUIT BLOCK >				FB4027	1-414-232-22	INDUCTOR CHIP 0UH	
CP4001	8-598-515-00	RF SPLITTER RFD-AC401		FB4028	1-414-232-22	INDUCTOR CHIP 0UH	
< DIODE >				FB4030	1-412-911-11	FERRITE 0UH	
D4002	8-719-812-43	DIODE TLG124A		FB4031	1-412-911-11	FERRITE 0UH	
D4004	8-719-929-15	DIODE HZS9.1NB2		FB4032	1-412-911-11	FERRITE 0UH	
D4005	8-719-991-33	DIODE 1SS133T-77		FB4033	1-412-911-11	FERRITE 0UH	
D4006	8-719-929-15	DIODE HZS9.1NB2		FB4034	1-412-911-11	FERRITE 0UH	
D4007	8-719-929-15	DIODE HZS9.1NB2		< IC >			
D4008	8-719-929-15	DIODE HZS9.1NB2		IC4001	8-759-587-04	IC SAA7127	
D4009	8-719-929-15	DIODE HZS9.1NB2		IC4002	8-759-587-03	IC TDA8601T	
D4010	8-719-929-15	DIODE HZS9.1NB2		IC4003	8-752-087-76	IC CXA2089Q-T6	
D4011	8-719-110-31	DIODE RD12ESB2		IC4005	8-752-072-94	IC CXA1875AM-T4	
D4012	8-719-982-27	DIODE MTZJ-33C		IC4006	8-759-524-83	IC TYA7809CTV	
D4013	8-719-991-33	DIODE 1SS133T-77		IC4007	8-759-574-75	IC KA78R33-YDTU	
D4014	8-719-109-69	DIODE RD3.6ESB2		IC4008	8-759-057-06	IC PCF8591T	
D4015	8-719-109-85	DIODE RD5.1ESB2		IC4009	8-759-239-25	IC TC74HC4066AF	
D4016	8-719-923-34	DIODE MTZJ-T-77-5.1B					

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< SOCKET >				R4027	1-216-022-00	RES,CHIP	75 5% 1/10W
J4001	*1-793-200-11	CONNECTOR, SQUARE TYPE 21P		R4029	1-216-073-00	RES,CHIP	10K 5% 1/10W
< COIL >				R4033	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
L4001	1-408-603-31	INDUCTOR	10UH	R4035	1-216-113-00	RES,CHIP	470K 5% 1/10W
L4002	1-410-645-31	INDUCTOR	100UH	R4036	1-216-022-00	RES,CHIP	75 5% 1/10W
L4005	1-410-645-31	INDUCTOR	100UH	R4044	1-216-022-00	RES,CHIP	75 5% 1/10W
L4006	1-410-667-31	INDUCTOR	22UH	R4046	1-216-113-00	RES,CHIP	470K 5% 1/10W
L4010	1-410-645-31	INDUCTOR	100UH	R4047	1-216-073-00	RES,CHIP	10K 5% 1/10W
< TRANSISTOR >				R4048	1-216-022-00	RES,CHIP	75 5% 1/10W
Q4001	1-801-806-11	TRANSISTOR DTC144EKA		R4052	1-216-295-91	SHORT	0
Q4004	1-801-806-11	TRANSISTOR DTC144EKA		R4053	1-216-295-91	SHORT	0
Q4005	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R4054	1-216-051-00	RES,CHIP	1.2K 5% 1/10W
Q4007	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R4055	1-216-051-00	RES,CHIP	1.2K 5% 1/10W
Q4008	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R4056	1-216-051-00	RES,CHIP	1.2K 5% 1/10W
Q4009	1-801-806-11	TRANSISTOR DTC144EKA		R4057	1-216-051-00	RES,CHIP	1.2K 5% 1/10W
Q4010	8-729-901-81	TRANSISTOR 2SC2412K		R4058	1-216-051-00	RES,CHIP	1.2K 5% 1/10W
Q4011	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R4059	1-216-051-00	RES,CHIP	1.2K 5% 1/10W
< RESISTOR >				R4072	1-216-022-00	RES,CHIP	75 5% 1/10W
JR4002	1-216-295-91	SHORT	0	R4073	1-216-073-91	RES,CHIP	10K 5% 1/10W
JR4003	1-216-295-91	SHORT	0	R4075	1-216-041-00	RES,CHIP	470 5% 1/10W
JR4007	1-216-295-91	SHORT	0	R4077	1-216-295-91	SHORT	0
JR4008	1-216-295-91	SHORT	0	R4078	1-216-113-00	RES,CHIP	470K 5% 1/10W
JR4009	1-216-295-91	SHORT	0	R4081	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4002	1-216-295-91	SHORT	0	R4082	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4004	1-216-049-91	RES,CHIP	1K 5% 1/10W	R4084	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4005	1-216-073-00	RES,CHIP	10K 5% 1/10W	R4085	1-216-022-00	RES,CHIP	75 5% 1/10W
R4006	1-216-073-00	RES,CHIP	10K 5% 1/10W	R4086	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4007	1-216-025-91	RES,CHIP	100 5% 1/10W	R4087	1-216-022-00	RES,CHIP	75 5% 1/10W
R4008	1-216-081-00	RES,CHIP	22K 5% 1/10W	R4088	1-216-061-00	RES,CHIP	3.3K 5% 1/10W
R4009	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R4089	1-216-069-00	RES,CHIP	6.8K 5% 1/10W
R4011	1-216-049-91	RES,CHIP	1K 5% 1/10W	R4090	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4012	1-216-025-91	RES,CHIP	100 5% 1/10W	R4091	1-216-295-91	SHORT	0
R4013	1-216-025-91	RES,CHIP	100 5% 1/10W	R4092	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4014	1-216-295-91	SHORT	0	R4093	1-216-295-91	SHORT	0
R4015	1-216-025-91	RES,CHIP	100 5% 1/10W	R4094	1-216-295-91	SHORT	0
R4016	1-216-025-91	RES,CHIP	100 5% 1/10W	R4095	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4017	1-216-049-91	RES,CHIP	1K 5% 1/10W	R4096	1-216-089-91	RES,CHIP	47K 5% 1/10W
R4018	1-216-073-00	RES,CHIP	10K 5% 1/10W	R4097	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4019	1-216-025-91	RES,CHIP	100 5% 1/10W	R4098	1-216-022-00	RES,CHIP	75 5% 1/10W
R4020	1-216-025-91	RES,CHIP	100 5% 1/10W	R4111	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4024	1-216-049-91	RES,CHIP	1K 5% 1/10W	R4112	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4025	1-216-022-00	RES,CHIP	75 5% 1/10W	R4113	1-216-073-00	RES,CHIP	10K 5% 1/10W
R4026	1-216-022-00	RES,CHIP	75 5% 1/10W	R4116	1-216-073-00	RES,CHIP	10K 5% 1/10W
				R4117	1-216-025-91	RES,CHIP	100 5% 1/10W
				R4118	1-216-025-91	RES,CHIP	100 5% 1/10W
				R4120	1-216-025-91	RES,CHIP	100 5% 1/10W
				R4121	1-216-025-91	RES,CHIP	100 5% 1/10W

REF. NO.	PART.NO	DESCRIPTION	REMARK		
R4122	1-216-025-91	RES,CHIP	100	5%	1/10W
R4123	1-216-025-91	RES,CHIP	100	5%	1/10W
R4124	1-216-025-91	RES,CHIP	100	5%	1/10W
R4125	1-216-025-91	RES,CHIP	100	5%	1/10W
R4126	1-216-025-91	RES,CHIP	100	5%	1/10W
R4127	1-216-025-91	RES,CHIP	100	5%	1/10W
R4128	1-216-025-91	RES,CHIP	100	5%	1/10W
R4129	1-216-295-91	SHORT	0		
R4130	1-216-295-91	SHORT	0		
R4131	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4132	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4140	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4141	1-216-033-00	RES,CHIP	220	5%	1/10W
R4143	1-216-113-00	RES,CHIP	470K	5%	1/10W
R4144	1-216-033-00	RES,CHIP	220	5%	1/10W
R4199	1-216-025-91	RES,CHIP	100	5%	1/10W
< TUNER >					
TU4001	8-598-502-00	FRONTEND BTD-DU602			
A2 Board Variant Parts KV-28DS20U/32DS20U					
< CAPACITOR >					
C4261	1-137-194-81	FILM	0.47MF	5%	50V
C4262	1-136-165-00	FILM	0.1MF	5%	50V
C4263	1-137-194-81	FILM	0.47MF	5%	50V
C4264	1-137-194-81	FILM	0.47MF	5%	50V
C4265	1-137-366-11	FILM	0.0022MF	5%	50V
C4266	1-137-366-11	FILM	0.0022MF	5%	50V
C4267	1-136-169-00	FILM	0.22MF	5%	50V
C4268	1-136-169-00	FILM	0.22MF	5%	50V
C4271	1-126-952-11	ELECT	1000MF	20%	35V
C4272	1-126-952-11	ELECT	1000MF	20%	35V
C4273	1-101-005-00	CERAMIC	0.022MF		50V
< CONNECTOR >					
CN4001	*1-770-747-11	CONNECTOR, BOARD TO BOARD 12P			
CN4204	*1-564-507-11	PLUG, CONNECTOR 4P			
CN4407	1-564-511-11	PLUG, CONNECTOR 8P			
< DIODE >					
D4260	8-719-109-72	DIODE RD3.9ESB2			
< IC >					
IC4004	8-759-585-29	IC TDA7264A			

REF. NO.	PART.NO	DESCRIPTION	REMARK		
< TRANSISTOR >					
Q4260	8-729-029-94	TRANSISTOR DTC143TSA			
Q4261	8-729-119-78	TRANSISTOR 2SC2785-HFE			
< RESISTOR >					
R4260	1-216-295-91	SHORT	0		
R4261	1-249-413-11	CARBON	470	5%	1/4W
R4262	1-249-421-11	CARBON	2.2K	5%	1/4W
R4263	1-249-434-11	CARBON	27K	5%	1/4W
R4264	1-249-425-11	CARBON	4.7K	5%	1/4W
R4265	1-247-863-91	CARBON	22K	5%	1/4W
R4266	1-249-424-11	CARBON	3.9K	5%	1/4W
R4267	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R4268	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R4269	1-535-465-11	LEAD JUMPER (5.0MM)			
R4270	1-535-465-11	LEAD JUMPER (5.0MM)			
*A-1632-854-A A Board, Complete (KV-28DS20U/32DS20U)					
*A-1632-852-A A Board, Complete (KV-28DX20U/32DX20U)					
A Board Common Parts					
	1-750-797-11	SOCKET, PLCC			
	4-352-844-01	PIN, LEAD, COATING			
< CAPACITOR >					
C1	1-163-038-91	CERAMIC CHIP 0.1MF			25V
C2	1-104-664-11	ELECT 47MF		20%	16V
C3	1-163-104-00	CERAMIC CHIP 30PF		5%	50V
C4	1-163-104-00	CERAMIC CHIP 30PF		5%	50V
C8	1-163-038-91	CERAMIC CHIP 0.1MF			25V
C10	1-216-073-00	RES,CHIP 10K		5%	1/10W
C15	1-163-021-91	CERAMIC CHIP 0.01MF		10%	50V
C18	1-163-038-91	CERAMIC CHIP 0.1MF			25V
C19	1-163-017-00	CERAMIC CHIP 0.0047MF		10%	50V
C20	1-163-021-91	CERAMIC CHIP 0.01MF		10%	50V
C21	1-163-021-91	CERAMIC CHIP 0.01MF		10%	50V
C22	1-163-117-00	CERAMIC CHIP 100PF		5%	50V
C24	1-163-141-00	CERAMIC CHIP 0.001MF		5%	50V
C45	1-163-038-91	CERAMIC CHIP 0.1MF			25V
C80	1-163-117-00	CERAMIC CHIP 100PF		5%	50V
C81	1-126-959-11	ELECT 0.47MF		20%	50V
C82	1-163-037-11	CERAMIC CHIP 0.022MF		10%	50V
C90	1-163-038-91	CERAMIC CHIP 0.1MF			25V
C101	1-163-038-91	CERAMIC CHIP 0.1MF			25V
C102	1-126-934-11	ELECT 220MF		20%	16V

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C103	1-126-965-11	ELECT 22MF	20% 50V	C256	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C104	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C257	1-126-965-11	ELECT 22MF	20% 50V
C110	1-104-664-11	ELECT 47MF	20% 16V	C258	1-126-964-11	ELECT 10MF	20% 50V
C112	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C259	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C113	1-104-664-11	ELECT 47MF	20% 16V	C260	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C120	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C261	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C121	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C262	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C122	1-163-137-00	CERAMIC CHIP 680PF	5% 50V	C263	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C123	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C264	1-126-963-11	ELECT 4.7MF	20% 50V
C124	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C265	1-126-964-11	ELECT 10MF	20% 50V
C125	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C266	1-126-964-11	ELECT 10MF	20% 50V
C144	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C267	1-126-965-11	ELECT 22MF	20% 50V
C201	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C268	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C202	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C269	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C203	1-104-661-91	ELECT 330MF	20% 16V	C270	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C204	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C271	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C205	1-126-965-11	ELECT 22MF	20% 50V	C272	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C207	1-126-964-11	ELECT 10MF	20% 50V	C273	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C208	1-126-964-11	ELECT 10MF	20% 50V	C274	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C211	1-126-964-11	ELECT 10MF	20% 50V	C275	1-164-346-11	CERAMIC CHIP 1MF	16V
C212	1-164-346-11	CERAMIC CHIP 1MF	16V	C276	1-164-346-11	CERAMIC CHIP 1MF	16V
C213	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C277	1-164-346-11	CERAMIC CHIP 1MF	16V
C214	1-164-346-11	CERAMIC CHIP 1MF	16V	C278	1-164-346-11	CERAMIC CHIP 1MF	16V
C215	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C279	1-126-965-11	ELECT 22MF	20% 50V
C216	1-104-664-11	ELECT 47MF	20% 16V	C280	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C217	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	C281	1-126-965-11	ELECT 22MF	20% 50V
C218	1-104-664-11	ELECT 47MF	20% 16V	C282	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C219	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	C289	1-163-005-91	CERAMIC CHIP 470PF	10% 50V
C220	1-126-964-11	ELECT 10MF	20% 50V	C290	1-163-021-91	CERAMIC CHIP 1000PF	10% 50V
C221	1-164-505-11	CERAMIC CHIP 2.2MF	16V	C291	1-163-021-91	CERAMIC CHIP 1000PF	10% 50V
C222	1-164-346-11	CERAMIC CHIP 1MF	16V	C292	1-163-005-91	CERAMIC CHIP 470PF	10% 50V
C223	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C300	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C224	1-164-346-11	CERAMIC CHIP 1MF	16V	C301	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C225	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C302	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C226	1-104-664-11	ELECT 47MF	20% 16V	C303	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C227	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	C304	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C228	1-104-664-11	ELECT 47MF	20% 16V	C305	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C229	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	C306	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V
C230	1-126-964-11	ELECT 10MF	20% 50V	C307	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V
C233	1-104-664-11	ELECT 47MF	20% 16V	C308	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V
C238	1-104-664-11	ELECT 47MF	20% 16V	C309	1-164-346-11	CERAMIC CHIP 1MF	16V
C239	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C310	1-164-346-11	CERAMIC CHIP 1MF	16V
C251	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V	C311	1-164-346-11	CERAMIC CHIP 1MF	16V
C252	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V	C312	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C253	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C313	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C254	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C315	1-216-295-91	SHORT 0	
C255	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C317	1-163-038-91	CERAMIC CHIP 0.1MF	25V

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C319	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C1013	1-126-965-11	ELECT 22MF	20% 50V
C320	1-126-965-11	ELECT 22MF	20% 50V	C1014	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C321	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	C1015	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C322	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V	C1020	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C323	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V	< CONNECTOR >			
C324	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V	CN1	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P	
C325	1-164-346-11	CERAMIC CHIP 1MF	16V	CN2	*1-564-508-11	PLUG, CONNECTOR 5P	
C326	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	CN4	*1-568-879-11	PIN, CONNECTOR 4P	
C327	1-130-770-00	FILM 0.15MF	5% 63V	CN201	1-766-296-21	CONNECTOR, DUAL SCART	
C328	1-126-965-11	ELECT 22MF	20% 50V	CN205	1-785-802-11	CONNECTOR, 20 PIN	
C329	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	CN301	*1-568-882-51	PIN, CONNECTOR 7P	
C330	1-137-581-11	FILM 0.1MF	5% 100V	CN303	*1-568-880-51	PIN, CONNECTOR 5P	
C331	1-137-581-11	FILM 0.1MF	5% 100V	< DIODE >			
C332	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	D2	8-719-988-61	DIODE 1SS355TE-17	
C333	1-126-933-11	ELECT 100MF	20% 16V	D16	8-719-988-61	DIODE 1SS355TE-17	
C334	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	D30	8-719-988-61	DIODE 1SS355TE-17	
C335	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	D101	8-719-977-81	DIODE DTZ33B	
C336	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	D201	8-719-069-60	DIODE UDZS-TE17-9.1B	
C337	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	D202	8-719-069-60	DIODE UDZS-TE17-9.1B	
C338	1-164-346-11	CERAMIC CHIP 1MF	16V	D203	8-719-069-60	DIODE UDZS-TE17-9.1B	
C339	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	D204	8-719-069-60	DIODE UDZS-TE17-9.1B	
C340	1-126-933-11	ELECT 100MF	20% 16V	D205	8-719-069-60	DIODE UDZS-TE17-9.1B	
C341	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D206	8-719-069-60	DIODE UDZS-TE17-9.1B	
C342	1-164-346-11	CERAMIC CHIP 1MF	16V	D207	8-719-069-60	DIODE UDZS-TE17-9.1B	
C343	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	D208	8-719-069-60	DIODE UDZS-TE17-9.1B	
C344	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	D209	8-719-069-60	DIODE UDZS-TE17-9.1B	
C347	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	D210	8-719-069-60	DIODE UDZS-TE17-9.1B	
C348	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	D211	8-719-069-60	DIODE UDZS-TE17-9.1B	
C350	1-126-964-11	ELECT 10MF	20% 50V	D212	8-719-069-60	DIODE UDZS-TE17-9.1B	
C351	1-164-505-11	CERAMIC CHIP 2.2MF	16V	D213	8-719-069-60	DIODE UDZS-TE17-9.1B	
C352	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D214	8-719-069-60	DIODE UDZS-TE17-9.1B	
C353	1-164-505-11	CERAMIC CHIP 2.2MF	16V	D215	8-719-069-60	DIODE UDZS-TE17-9.1B	
C354	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D216	8-719-069-55	DIODE UDZS-TE17-5.6B	
C355	1-126-965-11	ELECT 22MF	20% 50V	D217	8-719-069-55	DIODE UDZS-TE17-5.6B	
C356	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	D218	8-719-069-55	DIODE UDZS-TE17-5.6B	
C357	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	D220	8-719-988-61	DIODE 1SS355TE-17	
C358	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D221	8-719-988-61	DIODE 1SS355TE-17	
C359	1-163-231-11	CERAMIC CHIP 15PF	5% 50V	D222	8-719-069-60	DIODE UDZS-TE17-9.1B	
C360	1-163-231-11	CERAMIC CHIP 15PF	5% 50V	D223	8-719-069-60	DIODE UDZS-TE17-9.1B	
C370	1-164-505-11	CERAMIC CHIP 2.2MF	16V	D224	8-719-069-60	DIODE UDZS-TE17-9.1B	
C371	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	D225	8-719-069-60	DIODE UDZS-TE17-9.1B	
C372	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	D226	8-719-069-60	DIODE UDZS-TE17-9.1B	
C373	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V	D227	8-719-977-13	DIODE DTZ6.8C	
C534	1-163-021-91	CERAMIC CHIP 0.01MF	10% 50V	D251	8-719-047-16	DIODE BAS216	
C1001	1-163-235-11	CERAMIC CHIP 22PF	5% 50V	D254	8-719-056-81	DIODE UDZ-TE-17-5.6B	
C1002	1-163-235-11	CERAMIC CHIP 22PF	5% 50V				
C1010	1-163-038-91	CERAMIC CHIP 0.1MF	25V				



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
D255	8-719-056-81	DIODE UDZ-TE-17-5.6B		Q122	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D302	8-719-988-61	DIODE 1SS355TE-17		Q140	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D303	8-719-069-55	DIODE UDZS-TE17-5.6B		Q141	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
D304	8-719-069-55	DIODE UDZS-TE17-5.6B		Q201	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D320	8-719-069-60	DIODE UDZS-TE17-9.1B		Q202	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D331	8-719-069-55	DIODE UDZS-TE17-5.6B		Q300	1-801-806-11	TRANSISTOR DTC144EKA	
D370	8-719-047-16	DIODE BAS216		Q304	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D401	8-719-069-57	DIODE UDZS-TE17-6.8B		Q305	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D402	8-719-988-61	DIODE 1SS355TE-17		Q306	1-801-806-11	TRANSISTOR DTC144EKA	
D1010	8-719-036-58	DIODE MA3030-H(TX)		Q330	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
< ENCAPSULATED FILTER >				Q331	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
FL101	1-236-071-11	ENCAPSULATED COMPONENT		Q332	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
FL201	1-236-071-11	ENCAPSULATED COMPONENT		Q333	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
FL202	1-236-071-11	ENCAPSULATED COMPONENT		Q334	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
FL203	1-236-071-11	ENCAPSULATED COMPONENT		Q335	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
FL1001	1-236-071-11	ENCAPSULATED COMPONENT		Q401	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
< IC >				Q402	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC1	8-759-376-77	IC SDA30C263-GEG		Q403	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC2	8-759-492-55	IC M24C64-WMN6T		Q404	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
IC4	8-759-394-57	IC PST593C-MMP-4P		Q405	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
IC201	8-752-081-26	IC CXA2040AQ-T4		Q1001	1-801-806-11	TRANSISTOR DTC144EKA	
IC202	8-759-491-94	IC MSP3410D-PS-B4-T		Q1002	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
IC205	8-759-394-57	IC PST593C-MMP-4P		< RESISTOR >			
IC301	8-752-081-43	IC CXA2076Q-TL		JR7	1-216-295-91	SHORT	0
IC302	8-759-565-20	IC TDA4665T/V5-118		JR101	1-216-295-91	SHORT	0
IC1001	8-759-584-20	IC SDA5273-3CP-C55		JR201	1-216-295-91	SHORT	0
< COIL >				JR204	1-216-295-91	SHORT	0
L111	1-410-993-22	INDUCTOR CHIP 1UH		JR205	1-216-295-91	SHORT	0
L120	1-408-602-31	INDUCTOR 8.2UH		JR207	1-216-295-91	SHORT	0
L121	1-408-591-21	INDUCTOR 1UH		JR208	1-216-295-91	SHORT	0
L122	1-408-602-31	INDUCTOR 8.2UH		JR209	1-216-022-91	RES,CHIP	75 5% 1/10W
L300	1-408-607-31	INDUCTOR 22UH		JR213	1-216-295-91	SHORT	0
< TRANSISTOR >				JR214	1-216-295-91	SHORT	0
Q1	8-729-120-28	TRANSISTOR 2SC1623-L5L6		JR215	1-216-295-91	SHORT	0
Q4	8-729-120-28	TRANSISTOR 2SC1623-L5L6		JR216	1-216-295-91	SHORT	0
Q15	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		JR391	1-216-295-91	SHORT	0
Q30	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R1	1-216-049-91	RES,CHIP	1K 5% 1/10W
Q80	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R2	1-216-025-91	RES,CHIP	100 5% 1/10W
Q81	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R3	1-216-025-91	RES,CHIP	100 5% 1/10W
Q82	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R4	1-216-013-00	RES,CHIP	33 5% 1/10W
Q110	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R5	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
Q111	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R7	1-216-041-00	RES,CHIP	470 5% 1/10W
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R9	1-216-041-00	RES,CHIP	470 5% 1/10W
Q120	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R19	1-216-025-91	RES,CHIP	100 5% 1/10W
				R20	1-216-025-91	RES,CHIP	100 5% 1/10W
				R21	1-216-025-91	RES,CHIP	100 5% 1/10W

REF. NO.	PART.NO	DESCRIPTION	REMARK	REF. NO.	PART.NO	DESCRIPTION	REMARK
R22	1-216-025-91	RES,CHIP	100 5% 1/10W	R86	1-216-081-00	RES,CHIP	22K 5% 1/10W
R24	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R87	1-216-081-00	RES,CHIP	22K 5% 1/10W
R25	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R88	1-216-025-91	RES,CHIP	100 5% 1/10W
R26	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R89	1-216-025-91	RES,CHIP	100 5% 1/10W
R28	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R91	1-216-025-91	RES,CHIP	100 5% 1/10W
R29	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R92	1-216-025-91	RES,CHIP	100 5% 1/10W
R30	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R93	1-216-033-00	RES,CHIP	220 5% 1/10W
R31	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R94	1-216-033-00	RES,CHIP	220 5% 1/10W
R32	1-216-025-91	RES,CHIP	100 5% 1/10W	R95	1-216-033-00	RES,CHIP	220 5% 1/10W
R33	1-216-025-91	RES,CHIP	100 5% 1/10W	R99	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R34	1-216-025-91	RES,CHIP	100 5% 1/10W	R101	1-216-057-00	RES,CHIP	2.2K 5% 1/10W
R35	1-216-025-91	RES,CHIP	100 5% 1/10W	R102	1-216-025-91	RES,CHIP	100 5% 1/10W
R39	1-216-073-00	RES,CHIP	10K 5% 1/10W	R103	1-216-025-91	RES,CHIP	100 5% 1/10W
R46	1-216-095-00	RES,CHIP	82K 5% 1/10W	R104	1-216-073-00	RES,CHIP	10K 5% 1/10W
R48	1-216-121-91	RES,CHIP	1M 5% 1/10W	R105	1-216-113-00	RES,CHIP	470K 5% 1/10W
R49	1-216-025-91	RES,CHIP	100 5% 1/10W	R106	1-216-073-00	RES,CHIP	10K 5% 1/10W
R50	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R110	1-216-073-00	RES,CHIP	10K 5% 1/10W
R51	1-216-057-00	RES,CHIP	2.2K 5% 1/10W	R111	1-216-029-00	RES,CHIP	150 5% 1/10W
R54	1-216-025-91	RES,CHIP	100 5% 1/10W	R112	1-216-029-00	RES,CHIP	150 5% 1/10W
R58	1-216-057-00	RES,CHIP	2.2K 5% 1/10W	R113	1-216-001-00	RES,CHIP	10 5% 1/10W
R59	1-216-025-91	RES,CHIP	100 5% 1/10W	R114	1-216-029-00	RES,CHIP	150 5% 1/10W
R60	1-216-025-91	RES,CHIP	100 5% 1/10W	R115	1-216-033-00	RES,CHIP	220 5% 1/10W
R61	1-216-025-91	RES,CHIP	100 5% 1/10W	R116	1-216-025-91	RES,CHIP	100 5% 1/10W
R62	1-216-025-91	RES,CHIP	100 5% 1/10W	R117	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R63	1-216-025-91	RES,CHIP	100 5% 1/10W	R118	1-216-097-91	RES,CHIP	100K 5% 1/10W
R64	1-216-025-91	RES,CHIP	100 5% 1/10W	R120	1-216-069-00	RES,CHIP	6.8K 5% 1/10W
R65	1-216-025-91	RES,CHIP	100 5% 1/10W	R121	1-216-073-00	RES,CHIP	10K 5% 1/10W
R66	1-216-057-00	RES,CHIP	2.2K 5% 1/10W	R122	1-216-041-00	RES,CHIP	470 5% 1/10W
R67	1-216-057-00	RES,CHIP	2.2K 5% 1/10W	R123	1-216-031-00	RES,CHIP	180 5% 1/10W
R68	1-216-049-91	RES,CHIP	1K 5% 1/10W	R124	1-216-049-91	RES,CHIP	1K 5% 1/10W
R69	1-216-049-91	RES,CHIP	1K 5% 1/10W	R125	1-216-081-00	RES,CHIP	22K 5% 1/10W
R70	1-216-025-91	RES,CHIP	100 5% 1/10W	R126	1-216-025-91	RES,CHIP	100 5% 1/10W
R71	1-216-025-91	RES,CHIP	100 5% 1/10W	R127	1-216-081-00	RES,CHIP	22K 5% 1/10W
R72	1-216-025-91	RES,CHIP	100 5% 1/10W	R128	1-216-035-00	RES,CHIP	270 5% 1/10W
R73	1-216-025-91	RES,CHIP	100 5% 1/10W	R129	1-216-033-00	RES,CHIP	220 5% 1/10W
R74	1-216-025-91	RES,CHIP	100 5% 1/10W	R130	1-216-061-00	RES,CHIP	3.3K 5% 1/10W
R75	1-216-025-91	RES,CHIP	100 5% 1/10W	R131	1-216-073-00	RES,CHIP	10K 5% 1/10W
R76	1-216-025-91	RES,CHIP	100 5% 1/10W	R132	1-216-025-91	RES,CHIP	100 5% 1/10W
R77	1-216-025-91	RES,CHIP	100 5% 1/10W	R133	1-216-041-00	RES,CHIP	470 5% 1/10W
R78	1-414-233-22	INDUCTOR CHIP 0UH		R134	1-216-001-00	RES,CHIP	10 5% 1/10W
R79	1-216-033-00	RES,CHIP	220 5% 1/10W	R135	1-216-037-00	RES,CHIP	330 5% 1/10W
R80	1-216-049-91	RES,CHIP	1K 5% 1/10W	R136	1-216-033-00	RES,CHIP	220 5% 1/10W
R81	1-216-081-00	RES,CHIP	22K 5% 1/10W	R137	1-216-049-91	RES,CHIP	1K 5% 1/10W
R82	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R138	1-216-041-00	RES,CHIP	470 5% 1/10W
R83	1-216-073-00	RES,CHIP	10K 5% 1/10W	R144	1-216-081-00	RES,CHIP	22K 5% 1/10W
R84	1-216-081-00	RES,CHIP	22K 5% 1/10W	R145	1-216-049-91	RES,CHIP	1K 5% 1/10W
R85	1-216-073-00	RES,CHIP	10K 5% 1/10W	R146	1-216-049-91	RES,CHIP	1K 5% 1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R147	1-216-033-00	RES,CHIP	220	5%	1/10W	R246	1-216-041-00	RES,CHIP	470	5%	1/10W
R148	1-216-051-00	RES,CHIP	1.2K	5%	1/10W	R248	1-216-073-00	RES,CHIP	10K	5%	1/10W
R149	1-216-049-91	RES,CHIP	1K	5%	1/10W	R249	1-216-001-00	RES,CHIP	10	5%	1/10W
R150	1-216-061-00	RES,CHIP	3.3K	5%	1/10W	R250	1-216-073-00	RES,CHIP	10K	5%	1/10W
R151	1-216-025-91	RES,CHIP	100	5%	1/10W	R251	1-216-025-91	RES,CHIP	100	5%	1/10W
R153	1-216-295-91	SHORT	0			R252	1-216-025-91	RES,CHIP	100	5%	1/10W
R200	1-216-049-91	RES,CHIP	1K	5%	1/10W	R253	1-216-025-91	RES,CHIP	100	5%	1/10W
R203	1-216-025-91	RES,CHIP	100	5%	1/10W	R254	1-216-025-91	RES,CHIP	100	5%	1/10W
R204	1-216-025-91	RES,CHIP	100	5%	1/10W	R255	1-216-025-91	RES,CHIP	100	5%	1/10W
R205	1-216-081-00	RES,CHIP	22K	5%	1/10W	R256	1-216-025-91	RES,CHIP	100	5%	1/10W
R206	1-216-033-00	RES,CHIP	220	5%	1/10W	R257	1-216-017-91	RES,CHIP	47	5%	1/10W
R208	1-216-041-00	RES,CHIP	470	5%	1/10W	R258	1-216-049-91	RES,CHIP	1K	5%	1/10W
R209	1-216-182-00	RES,CHIP	220	5%	1/8W	R265	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R210	1-216-017-91	RES,CHIP	47	5%	1/10W	R266	1-216-295-91	SHORT	0		
R211	1-216-033-00	RES,CHIP	220	5%	1/10W	R267	1-216-295-91	SHORT	0		
R212	1-216-022-00	RES,CHIP	75	5%	1/10W	R270	1-216-022-00	RES,CHIP	75	5%	1/10W
R213	1-216-022-00	RES,CHIP	75	5%	1/10W	R271	1-216-022-00	RES,CHIP	75	5%	1/10W
R214	1-216-025-91	RES,CHIP	100	5%	1/10W	R272	1-216-022-00	RES,CHIP	75	5%	1/10W
R216	1-216-025-91	RES,CHIP	100	5%	1/10W	R273	1-216-022-00	RES,CHIP	75	5%	1/10W
R217	1-216-113-00	RES,CHIP	470K	5%	1/10W	R280	1-216-049-91	RES,CHIP	1K	5%	1/10W
R218	1-216-025-91	RES,CHIP	100	5%	1/10W	R281	1-216-081-00	RES,CHIP	22K	5%	1/10W
R219	1-216-113-00	RES,CHIP	470K	5%	1/10W	R282	1-216-089-91	RES,CHIP	47K	5%	1/10W
R220	1-216-295-91	SHORT	0			R284	1-216-081-00	RES,CHIP	22K	5%	1/10W
R221	1-216-041-00	RES,CHIP	470	5%	1/10W	R285	1-216-089-91	RES,CHIP	47K	5%	1/10W
R222	1-216-089-91	RES,CHIP	47K	5%	1/10W	R291	1-216-049-91	RES,CHIP	1K	5%	1/10W
R223	1-216-295-91	SHORT	0			R292	1-216-049-91	RES,CHIP	1K	5%	1/10W
R224	1-216-041-00	RES,CHIP	470	5%	1/10W	R293	1-216-049-91	RES,CHIP	1K	5%	1/10W
R225	1-216-089-91	RES,CHIP	47K	5%	1/10W	R294	1-216-049-91	RES,CHIP	1K	5%	1/10W
R226	1-216-033-00	RES,CHIP	220	5%	1/10W	R295	1-216-049-91	RES,CHIP	1K	5%	1/10W
R227	1-216-022-00	RES,CHIP	75	5%	1/10W	R296	1-216-049-91	RES,CHIP	1K	5%	1/10W
R228	1-216-022-00	RES,CHIP	75	5%	1/10W	R300	1-216-025-91	RES,CHIP	100	5%	1/10W
R229	1-216-033-00	RES,CHIP	220	5%	1/10W	R301	1-216-033-00	RES,CHIP	220	5%	1/10W
R230	1-216-022-00	RES,CHIP	75	5%	1/10W	R302	1-216-295-91	SHORT	0		
R232	1-216-025-91	RES,CHIP	100	5%	1/10W	R303	1-216-295-91	SHORT	0		
R233	1-216-025-91	RES,CHIP	100	5%	1/10W	R308	1-216-025-91	RES,CHIP	100	5%	1/10W
R234	1-216-113-00	RES,CHIP	470K	5%	1/10W	R309	1-216-033-00	RES,CHIP	220	5%	1/10W
R235	1-216-025-91	RES,CHIP	100	5%	1/10W	R310	1-216-033-00	RES,CHIP	220	5%	1/10W
R236	1-216-113-00	RES,CHIP	470K	5%	1/10W	R311	1-216-295-91	SHORT	0		
R237	1-216-295-91	SHORT	0			R312	1-216-295-91	SHORT	0		
R238	1-216-089-91	RES,CHIP	47K	5%	1/10W	R314	1-216-295-91	SHORT	0		
R239	1-216-041-00	RES,CHIP	470	5%	1/10W	R315	1-216-295-91	SHORT	0		
R240	1-216-295-91	SHORT	0			R316	1-216-033-00	RES,CHIP	220	5%	1/10W
R241	1-216-089-91	RES,CHIP	47K	5%	1/10W	R318	1-216-089-91	RES,CHIP	47K	5%	1/10W
R242	1-216-041-00	RES,CHIP	470	5%	1/10W	R319	1-216-081-00	RES,CHIP	22K	5%	1/10W
R243	1-216-033-00	RES,CHIP	220	5%	1/10W	R320	1-216-025-91	RES,CHIP	100	5%	1/10W
R244	1-216-295-91	SHORT	0			R321	1-216-025-91	RES,CHIP	100	5%	1/10W
R245	1-216-022-00	RES,CHIP	75	5%	1/10W	R322	1-216-025-91	RES,CHIP	100	5%	1/10W

REF. NO.	PART.NO	DESCRIPTION	REMARK	REF. NO.	PART.NO	DESCRIPTION	REMARK
R323	1-216-033-00	RES,CHIP	220 5% 1/10W	R410	1-216-049-91	RES,CHIP	1K 5% 1/10W
R324	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	R411	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R326	1-216-025-91	RES,CHIP	100 5% 1/10W	R1001	1-216-025-91	RES,CHIP	100 5% 1/10W
R327	1-216-025-91	RES,CHIP	100 5% 1/10W	R1002	1-216-025-91	RES,CHIP	100 5% 1/10W
R328	1-216-129-00	RES,CHIP	2.2M 5% 1/10W	R1005	1-216-041-00	RES,CHIP	470 5% 1/10W
R329	1-216-083-00	RES,CHIP	27K 5% 1/10W	R1010	1-216-295-91	SHORT	0
R330	1-216-025-91	RES,CHIP	100 5% 1/10W	R1012	1-216-041-00	RES,CHIP	470 5% 1/10W
R331	1-216-057-00	RES,CHIP	2.2K 5% 1/10W	R1014	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
R332	1-216-025-91	RES,CHIP	100 5% 1/10W	R1017	1-216-295-91	SHORT	0
R333	1-216-075-00	RES,CHIP	12K 5% 1/10W	R1021	1-216-025-91	RES,CHIP	100 5% 1/10W
R334	1-216-041-00	RES,CHIP	470 5% 1/10W	R1022	1-216-025-91	RES,CHIP	100 5% 1/10W
R335	1-216-675-91	METAL CHIP	10K 0.50% 1/10W	R1023	1-216-025-91	RES,CHIP	100 5% 1/10W
R336	1-216-109-00	RES,CHIP	330K 5% 1/10W	R1024	1-216-041-00	RES,CHIP	470 5% 1/10W
R337	1-216-025-91	RES,CHIP	100 5% 1/10W	R1026	1-216-025-91	RES,CHIP	100 5% 1/10W
R338	1-216-051-00	RES,CHIP	1.2K 5% 1/10W	R1027	1-216-025-91	RES,CHIP	100 5% 1/10W
R339	1-216-049-91	RES,CHIP	1K 5% 1/10W	R1028	1-216-025-91	RES,CHIP	100 5% 1/10W
R340	1-216-025-91	RES,CHIP	100 5% 1/10W	< TUNER >			
R341	1-216-025-91	RES,CHIP	100 5% 1/10W	TU101	1-693-339-11	TUNER/VIF	
R342	1-216-049-91	RES,CHIP	1K 5% 1/10W	< CRYSTAL >			
R343	1-216-061-00	RES,CHIP	3.3K 5% 1/10W	X1	1-767-154-21	VIBRATOR, CERAMIC	
R344	1-216-067-00	RES,CHIP	5.6K 5% 1/10W	X201	1-760-628-11	VIBRATOR, CRYSTAL	
R345	1-216-025-91	RES,CHIP	100 5% 1/10W	X301	1-567-504-11	OSCILLATOR, CRYSTAL	
R346	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	X302	1-567-505-11	OSCILLATOR, CRYSTAL	
R347	1-216-025-91	RES,CHIP	100 5% 1/10W	X303	1-767-127-11	VIBRATOR, CERAMIC	
R348	1-216-025-91	RES,CHIP	100 5% 1/10W	X1001	1-579-965-21	VIBRATOR, CRYSTAL	
R349	1-216-025-91	RES,CHIP	100 5% 1/10W	A Board Variant Parts			
R350	1-216-042-00	RES,CHIP	510 5% 1/10W	KV-28DS20U/32DS20U			
R351	1-216-053-00	RES,CHIP	1.5K 5% 1/10W	< CAPACITOR >			
R352	1-216-077-00	RES,CHIP	15K 5% 1/10W	C242	1-216-295-91	SHORT	0
R353	1-216-033-00	RES,CHIP	220 5% 1/10W	C243	1-216-295-91	SHORT	0
R354	1-216-295-91	SHORT	0	C283	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
R357	1-216-049-91	RES,CHIP	1K 5% 1/10W	C284	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
R358	1-216-295-91	SHORT	0	< CONNECTOR >			
R359	1-216-097-91	RES,CHIP	100K 5% 1/10W	CN202	1-766-928-11	CONNECTOR, BOARD TO BOARD 8P	
R360	1-216-049-91	RES,CHIP	1K 5% 1/10W	CN203	1-766-928-11	CONNECTOR, BOARD TO BOARD 8P	
R362	1-216-049-91	RES,CHIP	1K 5% 1/10W	A Board Variant Parts			
R364	1-216-049-91	RES,CHIP	1K 5% 1/10W	KV-28DX20U/32DX20U			
R370	1-216-295-91	SHORT	0	< IC >			
R401	1-216-033-00	RES,CHIP	220 5% 1/10W	IC3	8-759-598-95	IC M27C2001-15C1BD101	
R402	1-216-049-91	RES,CHIP	1K 5% 1/10W				
R403	1-216-065-91	RES,CHIP	4.7K 5% 1/10W				
R404	1-216-083-00	RES,CHIP	27K 5% 1/10W				
R405	1-216-073-00	RES,CHIP	10K 5% 1/10W				
R406	1-216-073-00	RES,CHIP	10K 5% 1/10W				
R407	1-216-073-00	RES,CHIP	10K 5% 1/10W				
R408	1-216-049-91	RES,CHIP	1K 5% 1/10W				
R409	1-216-049-91	RES,CHIP	1K 5% 1/10W				



The components identified by shading and marked **△** are critical for safety
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REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK			
< TRANSISTOR >						D714	8-719-991-33	DIODE 1SS133T-77				
Q203	8-729-120-28	TRANSISTOR 2SC1623-L5L6				< IC >						
Q204	8-729-120-28	TRANSISTOR 2SC1623-L5L6				IC701	8-759-346-42	IC TDA6101Q/N3				
< RESISTOR >					IC702	8-759-346-42	IC TDA6101Q/N3					
R283	1-216-049-91	RES, CHIP 1K 5% 1/10W				IC703	8-759-346-42	IC TDA6101Q/N3				
R286	1-216-049-91	RES, CHIP 1K 5% 1/10W				< CRT SOCKET >						
*A-1638-126-A C Board, Complete					J701	△ 1-526-990-21	SOCKET, CRT					
< CAPACITOR >					< COIL >							
C702	1-128-551-11	ELECT 22MF 20% 25V				L701	1-410-667-31	INDUCTOR 22UH				
C703	1-104-664-11	ELECT 47MF 20% 10V				< TRANSISTOR >						
C704	1-102-945-00	CERAMIC 8PF 0.5PF 50V				Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE				
C705	1-102-945-00	CERAMIC 8PF 0.5PF 50V				< RESISTOR >						
C706	1-102-953-00	CERAMIC 18PF 5% 50V				R701	1-247-807-31	CARBON 100 5% 1/4W				
C707	1-107-651-11	ELECT 4.7MF 20% 250V				R702	1-249-417-11	CARBON 1K 5% 1/4W				
C708	1-126-960-11	ELECT 1MF 20% 50V				R703	1-249-437-11	CARBON 47K 5% 1/4W				
C709	1-101-006-00	CERAMIC 0.047MF 50V				R704	1-215-413-00	METAL 470 1% 1/4W				
C710	1-107-651-11	ELECT 4.7MF 20% 250V				R705	1-249-441-11	CARBON 100K 5% 1/4W				
C711	1-107-651-11	ELECT 4.7MF 20% 250V				R706	1-535-465-11	LEAD, JUMPER (5.0MM)				
C712	1-101-006-00	CERAMIC 0.047MF 50V				R707	1-215-424-00	METAL 1.3K 1% 1/4W				
C714	1-101-006-00	CERAMIC 0.047MF 50V				R708	1-215-424-00	METAL 1.3K 1% 1/4W				
C715	1-101-006-00	CERAMIC 0.047MF 50V				R709	1-215-424-00	METAL 1.3K 1% 1/4W				
C716	1-102-157-00	CERAMIC 560PF 10% 500V				R710	1-215-413-00	METAL 470 1% 1/4W				
C717	1-102-157-00	CERAMIC 560PF 10% 500V				R711	1-249-421-11	CARBON 2.2K 5% 1/4W				
C718	1-102-157-00	CERAMIC 560PF 10% 500V				R712	1-249-431-11	CARBON 15K 5% 1/4W				
C719	1-102-074-00	CERAMIC 0.001MF 10% 50V				R718	1-249-422-11	CARBON 2.7K 5% 1/4W				
C725	1-107-651-11	ELECT 4.7MF 20% 250V				R719	1-249-422-11	CARBON 2.7K 5% 1/4W				
C731	1-117-214-11	CERAMIC 0.001MF 10% 2KV				R720	1-249-422-11	CARBON 2.7K 5% 1/4W				
< CONNECTOR >					R722	1-249-435-11	CARBON 33K 5% 1/4W					
CN701	*1-568-882-51	PIN, CONNECTOR 7P				R725	1-215-903-11	METAL OXIDE 68K 5% 2W F				
CN703	1-778-037-11	PIN, CONNECTOR 6P				R727	1-215-903-11	METAL OXIDE 68K 5% 2W F				
CN706	1-695-915-11	TAB (CONTACT)				R729	1-215-903-11	METAL OXIDE 68K 5% 2W F				
CN708	1-695-915-11	TAB (CONTACT)				R731	1-202-818-00	SOLID 1K 20% 1/2W				
< DIODE >					R732	1-202-818-00	SOLID 1K 20% 1/2W					
D701	8-719-109-85	DIODE RD5.1ESB2				R733	1-202-818-00	SOLID 1K 20% 1/2W				
D704	8-719-991-33	DIODE 1SS133T-77				R734	1-247-739-11	CARBON 100 5% 1/2W				
D705	8-719-991-33	DIODE 1SS133T-77				R738	1-249-489-11	CARBON 22K 5% 1/2W				
D707	8-719-991-33	DIODE 1SS133T-77				R740	1-216-391-11	METAL OXIDE 1.5 5% 3W F				
D709	8-719-051-85	DIODE HSS83TD				R742	1-215-912-11	METAL OXIDE 150 5% 3W F				
D710	8-719-051-85	DIODE HSS83TD				R743	1-202-847-00	SOLID 560K 20% 1/2W				
D711	8-719-051-85	DIODE HSS83TD										
D712	8-719-908-03	DIODE GP08D										
D713	8-719-109-72	DIODE RD3.9ESB2										

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C **D2** **D**

REF. NO.	PART.NO	DESCRIPTION	REMARK	REF. NO.	PART.NO	DESCRIPTION	REMARK
		< VARIABLE RESISTOR >		R8807	1-202-719-00	SOLID 1M 20% 1/2W	
RV701	1-241-656-21	RES, ADJ, METAL FILM 110M		D2 Board Variant Parts KV-28DS20U/28DX20U			
		< SPARK GAP >				< CAPACITOR >	
SG701	1-517-712-31	GAP, SPARK		C8802	1-136-104-00	FILM 0.16MF 5% 200V	
SG702	1-517-712-31	GAP, SPARK		C8805	1-136-569-11	FILM 1.2MF 5% 200V	
SG703	1-517-712-31	GAP, SPARK		D2 Board Variant Parts KV-32DS20U/32DX20U			
SG704	1-519-421-11	GAP, DISCHARGE				< CAPACITOR >	
*A-1642-254-A D2 Board, Complete (KV-28DS20U/28DX20U) *A-1642-251-A D2 Board, Complete (KV-32DS20U/32DX20U)				C8802	1-136-946-11	FILM 0.12MF 5% 200V	
D2 Board Common Parts				C8805	1-136-105-00	FILM 0.33MF 5% 200V	
		< CAPACITOR >		*A-1642-253-A D Board, Complete (KV-28DS20U/28DX20U) *A-1642-252-A D Board, Complete (KV-32DS20U/32DX20U)			
C8801	1-107-683-11	ELECT 2.2MF 0 250V		D Board Common Parts			
C8804	1-136-207-11	FILM 0.047MF 10% 250V			4-201-023-01	SPACER, INSULATING	
		< CONNECTOR >			4-202-373-01	SPRING, IC	
CN8801	*1-770-748-11	CONNECTOR, BOARD TO BOARD 12P			4-202-710-01	SPACER, INSULATING	
		< DIODE >			4-382-854-11	SCREW (M3X10), P, SW (+)	
D8801	8-719-923-60	DIODE MTZJ-T-77-9.1A			< CAPACITOR >		
D8802	8-719-302-43	DIODE EL1Z		C503	1-136-165-00	FILM 0.1MF 5% 50V	
		< IC >		C504	1-102-119-00	CERAMIC 0.0015MF 10% 50V	
IC8801	8-749-010-64	PHOTO COUPLER PC123F2		C506	1-126-941-11	ELECT 470MF 20% 25V	
		< COIL >		C507	1-109-953-11	ELECT 2.2MF 20% 50V	
L8801	1-406-674-11	INDUCTOR 3.3MMH		C509	1-136-165-00	FILM 0.1MF 5% 50V	
L8802	1-406-978-11	INDUCTOR 150UH		C510	1-126-969-11	ELECT 220MF 20% 50V	
		< TRANSISTOR >		C511	1-136-202-11	FILM 0.33MF 5% 63V	
Q8801	8-729-034-09	TRANSISTOR 2SK2518-01MR		C513	1-106-220-00	MYLAR 0.1MF 10% 100V	
Q8802	8-729-030-02	TRANSISTOR DTC144ESA		C514	1-136-165-00	FILM 0.1MF 5% 50V	
Q8803	8-729-030-02	TRANSISTOR DTC144ESA		C515	1-126-941-11	ELECT 470MF 20% 25V	
		< RESISTOR >		C517	1-126-941-11	ELECT 470MF 20% 25V	
R8801	1-215-909-11	METAL OXIDE 47 5% 3W F		C518	1-102-228-00	CERAMIC 470PF 10% 500V	
R8802	1-249-441-11	CARBON 100K 5% 1/4W		C519	1-102-228-00	CERAMIC 470PF 10% 500V	
R8803	1-249-441-11	CARBON 100K 5% 1/4W		C520	1-126-941-11	ELECT 470MF 20% 25V	
R8804	1-249-421-11	CARBON 2.2K 5% 1/4W		C521	1-107-698-11	ELECT 10MF 20% 25V	
R8805	1-249-429-11	CARBON 10K 5% 1/4W		C522	1-126-964-11	ELECT 10MF 20% 50V	
R8806	1-247-807-31	CARBON 100 5% 1/4W		C523	1-136-165-00	FILM 0.1MF 5% 50V	
				C600	Δ 1-119-888-51	CERAMIC 2200PF 20% 250V	
				C601	Δ 1-161-964-91	CERAMIC 0.0047MF 250V	
				C602	Δ 1-161-964-91	CERAMIC 0.0047MF 250V	

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C603	1-117-752-11	ELECT (BLOCK)	330MF 20% 450V	C826	1-161-830-00	CERAMIC 0.0047MF	500V
C604	1-126-968-11	ELECT	100MF 20% 50V	C829	1-126-959-11	ELECT 0.47MF 20%	50V
C605	1-107-929-11	ELECT	10MF 20% 100V	C832	1-126-960-11	ELECT 1MF 20%	50V
C606	1-162-318-11	CERAMIC	0.001MF 10% 500V	C834	1-128-551-11	ELECT 22MF 20%	25V
C607	1-104-666-11	ELECT	220MF 20% 25V	C835	1-162-318-11	CERAMIC 0.001MF 10%	500V
C608	1-109-880-11	FILM	0.0015MF 3% 2KV	C836	1-162-117-00	CERAMIC 100PF 10%	500V
C609	1-102-228-00	CERAMIC	470PF 10% 500V	C838	1-102-228-00	CERAMIC 470PF 10%	500V
C611	1-102-228-00	CERAMIC	470PF 10% 500V	C839	1-136-207-11	FILM 0.047MF 10%	250V
C612	1-107-929-11	ELECT	10MF 20% 100V	C841	1-102-114-00	CERAMIC 470PF 10%	50V
C613	1-124-347-00	ELECT	100MF 20% 160V	C910	1-535-465-11	LEAD, JUMPER (5.0MM)	
C614	1-126-933-11	ELECT	100MF 20% 16V	C916	1-162-318-11	CERAMIC 0.001MF 10%	500V
C615	1-115-789-11	ELECT	0.001F 20% 25V	C1200	1-136-165-00	FILM 0.1MF 5%	50V
C616	1-115-789-11	ELECT	0.001F 20% 25V	C1201	1-137-194-81	FILM 0.47MF 5%	50V
C618	1-136-165-00	FILM	0.1MF 5% 50V	C1202	1-137-194-81	FILM 0.47MF 5%	50V
C619	1-102-228-00	CERAMIC	470PF 10% 500V	C1203	1-136-169-00	FILM 0.22MF 5%	50V
C620	1-102-228-00	CERAMIC	470PF 10% 500V	C1204	1-136-169-00	FILM 0.22MF 5%	50V
C622	1-107-925-11	ELECT	1MF 20% 100V	C1205	1-101-005-00	CERAMIC 0.022MF	50V
C624	1-136-165-00	FILM	0.1MF 5% 50V	C1206	1-101-005-00	CERAMIC 0.022MF	50V
C625	1-126-967-11	ELECT	47MF 20% 50V	C1207	1-126-933-11	ELECT 100MF 20%	16V
C626	1-104-666-11	ELECT	220MF 20% 25V	C1208	1-126-963-11	ELECT 4.7MF 20%	50V
C628	1-126-964-11	ELECT	10MF 20% 50V	C1209	1-126-963-11	ELECT 4.7MF 20%	50V
C629	1-115-819-11	ELECT	0.0022F 20% 35V	C1210	1-126-941-11	ELECT 470MF 20%	25V
C630	1-115-819-11	ELECT	0.0022F 20% 35V	C1212	1-162-318-11	CERAMIC 0.001MF 10%	500V
C631	1-126-965-11	ELECT	22MF 20% 50V	C1213	1-162-318-11	CERAMIC 0.001MF 10%	500V
C632	1-104-666-11	ELECT	220MF 20% 25V	C1214	1-126-933-11	ELECT 100MF 20%	16V
C636	Δ 1-119-888-51	CERAMIC	2200PF 20% 250V	C1215	1-137-194-81	FILM 0.47MF 5%	50V
C638	1-136-203-11	FILM	0.01MF 10% 250V	C1216	1-137-366-11	FILM 0.0022MF 5%	50V
C640	1-106-220-00	MYLAR	0.1MF 10% 100V	C1217	1-137-366-11	FILM 0.0022MF 5%	50V
C641	Δ 1-113-916-11	CERAMIC	0.01MF 20% 250V	C1218	1-126-941-11	ELECT 470MF 20%	25V
C642	Δ 1-113-916-11	CERAMIC	0.01MF 20% 250V	C1220	1-162-318-11	CERAMIC 0.001MF 10%	500V
C647	1-162-116-00	CERAMIC	680PF 10% 2KV	C1221	1-162-318-11	CERAMIC 0.001MF 10%	500V
C651	1-102-228-00	CERAMIC	470PF 10% 500V	C1223	1-101-006-00	CERAMIC 0.047MF	50V
C800	1-137-368-11	FILM	0.0047MF 5% 50V	< CONNECTOR >			
C803	1-129-898-00	FILM	0.0022MF 5% 630V	CN600	Δ *1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
C804	1-136-165-00	FILM	0.1MF 5% 50V	CN601	Δ 1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
C805	1-136-207-11	FILM	0.047MF 10% 250V	CN602	Δ *1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	
C806	1-107-370-11	FILM	0.1MF 10% 200V	CN613	4-352-844-01	PIN, LEAD, COATING	
C807	1-136-540-11	FILM	0.82MF 5% 200V	CN616	4-352-844-01	PIN, LEAD, COATING	
C811	1-162-318-11	CERAMIC	0.001MF 10% 500V	CN800	*1-580-798-11	CONNECTOR PIN (DY) 6P	
C812	1-136-540-11	FILM	0.82MF 5% 200V	CN801	*1-568-879-11	PIN, CONNECTOR 4P	
C813	1-129-724-00	FILM	0.068MF 5% 630V	CN802	1-695-915-11	TAB (CONTACT)	
C815	1-137-046-11	FILM	0.0082MF 10% 400V	CN803	1-695-915-11	TAB (CONTACT)	
C816	1-117-214-11	CERAMIC	0.001MF 10% 2KV	CN804	1-778-037-11	PIN, CONNECTOR 6P	
C817	1-117-214-11	CERAMIC	0.001MF 10% 2KV	CN805	*1-770-747-11	CONNECTOR, BOARD TO BOARD 12P	
C819	1-136-208-11	FILM	0.068MF 10% 250V	CN901	*1-568-882-51	PIN, CONNECTOR 7P	
C822	1-107-662-11	ELECT	22MF 20% 250V	CN902	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
C824	1-123-024-21	ELECT	33MF 160V				

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REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
CN903	*1-564-516-11	PLUG, CONNECTOR 13P		D812	8-719-038-49	DIODE FMS-3FU-LF027-103	
CN904	*1-564-511-11	PLUG, CONNECTOR 8P		D815	8-719-908-03	DIODE GP08D	
CN1401	*1-568-880-51	PIN, CONNECTOR 5P		D817	8-719-109-85	DIODE RD5.1ESB2	
CN1403	*1-564-511-11	PLUG, CONNECTOR 8P		D902	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN1407	1-564-511-11	PLUG, CONNECTOR 8P		D903	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN1408	*1-568-879-11	PIN, CONNECTOR 4P		D904	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN1803	*1-564-508-11	PLUG, CONNECTOR 5P		D905	8-719-923-60	DIODE MTZJ-T-77-9.1A	
	< DIODE >			D906	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D500	8-719-109-85	DIODE RD5.1ESB2		D920	8-719-109-89	DIODE RD5.6ESB2	
D502	8-719-979-85	DIODE EGP20G		D1201	8-719-109-72	DIODE RD3.9ESB2	
D503	8-719-979-85	DIODE EGP20G		D1202	1-535-465-11	LEAD, JUMPER (5.0MM)	
D504	8-719-991-33	DIODE 1SS133T-77			< FERRITE BEAD >		
D505	8-719-982-03	DIODE MTZJ-3.6A		FB501	1-410-397-21	FERRITE 1.1UH	
D506	8-719-991-33	DIODE 1SS133T-77		FB600	1-410-396-41	FERRITE 0.45UH	
D507	8-719-109-85	DIODE RD5.1ESB2		FB601	1-410-396-41	FERRITE 0.45UH	
D510	8-719-924-13	DIODE MTZJ-T-77-22B		FB602	1-410-397-21	FERRITE 1.1UH	
D570	8-719-924-13	DIODE MTZJ-T-77-22B		FB603	1-410-396-41	FERRITE 0.45UH	
D571	8-719-924-13	DIODE MTZJ-T-77-22B		FB604	1-410-396-41	FERRITE 0.45UH	
D600	8-719-510-53	DIODE D4SB60L		FB605	1-410-396-41	FERRITE 0.45UH	
D601	8-719-046-77	DIODE EM1-V1		FB606	1-410-397-21	FERRITE 1.1UH	
D603	8-719-109-97	DIODE RD6.8ESB2		FB607	1-410-397-21	FERRITE 1.1UH	
D604	8-719-046-75	DIODE EU-1-V1		FB608	1-410-396-41	FERRITE 0.45UH	
D605	8-719-302-43	DIODE EL1Z		FB609	1-410-397-21	FERRITE 1.1UH	
D606	8-719-302-43	DIODE EL1Z		FB800	1-410-397-21	FERRITE 1.1UH	
D607	8-719-046-78	DIODE EG-1Z-V1		FB801	1-410-396-41	FERRITE 0.45UH	
D608	8-719-302-06	DIODE EU2A		FB901	1-535-465-11	LEAD, JUMPER (5.0MM)	
D609	8-719-053-32	DIODE FMU-G16S		FB902	1-535-465-11	LEAD, JUMPER (5.0MM)	
D611	8-719-058-38	DIODE FMN-G12S			< ENCAPSULATED FILTER >		
D612	8-719-058-38	DIODE FMN-G12S		FL501	1-236-163-41	ENCAPSULATED COMPONENT	
D613	8-719-058-38	DIODE FMN-G12S			< IC >		
D614	8-719-058-38	DIODE FMN-G12S		IC500	8-759-192-71	IC STV9379	
D617	8-719-991-33	DIODE 1SS133T-77		IC600	8-749-010-92	IC STR-S6709	
D618	8-719-991-33	DIODE 1SS133T-77		IC601 Δ	8-749-013-21	IC TLP721 (D4-GR.T)	
D619	8-719-991-33	DIODE 1SS133T-77		IC602	8-749-016-19	IC SE135N-LF4	
D620	8-719-991-33	DIODE 1SS133T-77		IC603	8-759-144-82	IC UPC2405HF	
D622	8-719-923-60	DIODE MTZJ-T-77-9.1A		IC606	8-759-267-25	IC LM2940T-9.0	
D625	8-719-991-33	DIODE 1SS133T-77		IC800	8-759-103-93	IC UPC393C	
D637	8-719-110-17	DIODE RD10ESB2		IC1200	8-759-585-29	IC TDA7264A	
D638	8-719-991-33	DIODE 1SS133T-77		IC1201	8-759-502-21	IC TDA2822M	
D800	8-719-991-33	DIODE 1SS133T-77			< SOCKET >		
D801	8-719-991-33	DIODE 1SS133T-77		J1200	1-770-218-11	JACK, PIN	
D803	8-719-908-03	DIODE GP08D					
D807	8-719-302-43	DIODE EL1Z					
D808	8-719-908-03	DIODE GP08D					
D810	8-719-302-43	DIODE EL1Z					
D811	8-719-110-41	DIODE RD15ESB2					

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< COIL >				R502	1-249-421-11	CARBON 2.2K 5%	1/4W
L501	1-535-465-11	LEAD, JUMPER (5.0MM)		R503	1-249-429-11	CARBON 10K 5%	1/4W
L502	1-412-519-11	INDUCTOR 3.3UH		R505	1-249-382-11	CARBON 1.2 5%	1/4W F
L503	1-412-519-11	INDUCTOR 3.3UH		R507	1-215-888-00	METAL OXIDE 220 5%	2W F
L609	1-412-533-21	INDUCTOR 47UH		R508	1-216-371-00	METAL OXIDE 1.5 5%	2W F
L610	1-535-465-11	LEAD, JUMPER (5.0MM)		R509	1-249-443-11	CARBON 0.47 5%	1/4W F
L611	1-412-527-11	INDUCTOR 15UH		R510	1-249-443-11	CARBON 0.47 5%	1/4W F
L612	1-412-522-41	INDUCTOR 5.6UH		R520	1-215-451-00	METAL 18K 1%	1/4W
L613	1-412-522-41	INDUCTOR 5.6UH		R522	1-247-863-91	CARBON 22K 5%	1/4W
L615	1-412-529-11	INDUCTOR 22UH		R523	1-247-863-91	CARBON 22K 5%	1/4W
L616	1-412-533-21	INDUCTOR 47UH		R524	1-249-425-11	CARBON 4.7K 5%	1/4W
L801	1-459-111-00	INDUCTOR 10MMH		R525	1-249-425-11	CARBON 4.7K 5%	1/4W
L802	1-459-104-00	COIL, WITH CORE		R526	1-249-421-11	CARBON 2.2K 5%	1/4W
L806	1-535-465-11	LEAD, JUMPER (5.0MM)		R527	1-215-433-00	METAL 3.3K 1%	1/4W
L809	1-408-611-31	INDUCTOR 47UH		R540	1-249-441-11	CARBON 100K 5%	1/4W
L813	1-412-552-11	INDUCTOR 2.2MMH		R600	Δ 1-216-490-11	METAL OXIDE 39K 5%	3W F
< IC LINK >				R601	1-249-417-11	CARBON 1K 5%	1/4W
PS600	Δ 1-532-686-21	LINK, IC 2.7A (ICP-F75)		R602	1-215-473-00	METAL 150K 1%	1/4W
PS601	Δ 1-532-686-21	LINK, IC 2.7A (ICP-F75)		R603	1-215-898-11	METAL OXIDE 10K 5%	2W F
PS602	Δ 1-532-686-21	LINK, IC 2.7A (ICP-F75)		R604	1-249-420-11	CARBON 1.8K 5%	1/4W
PS603	Δ 1-532-686-21	LINK, IC 2.7A (ICP-F75)		R605	1-216-362-11	METAL OXIDE 0.27 5%	2W F
< TRANSISTOR >				R606	1-535-143-21	LEAD, JUMPER (12.5MM)	
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE		R607	1-216-421-11	METAL OXIDE 12 5%	1W F
Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE		R608	1-216-365-00	METAL OXIDE 0.47 5%	2W F
Q503	8-729-030-02	TRANSISTOR DTC144ESA		R609	1-535-465-11	LEAD, JUMPER (5.0MM)	
Q601	8-729-025-04	TRANSISTOR 2SC3852A		R611	1-249-439-11	CARBON 68K 5%	1/4W
Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE		R612	1-249-426-11	CARBON 5.6K 5%	1/4W
Q606	8-729-029-56	TRANSISTOR DTA144ESA		R616	1-215-471-00	METAL 120K 1%	1/4W
Q607	8-729-119-78	TRANSISTOR 2SC2785-HFE		R617	1-215-901-00	METAL OXIDE 33K 5%	2W F
Q611	8-729-200-21	TRANSISTOR 2SC2500-B		R618	1-247-863-91	CARBON 22K 5%	1/4W
Q801	8-729-039-68	TRANSISTOR IRF620		R619	1-216-425-11	METAL OXIDE 56 5%	1W F
Q802	8-729-042-86	TRANSISTOR 2SC5251-01		R620	1-260-131-11	CARBON 470K 5%	1/2W
Q803	8-729-119-80	TRANSISTOR 2SC2688-LK		R621	1-216-425-11	METAL OXIDE 56 5%	1W F
Q805	8-729-030-02	TRANSISTOR DTC144ESA		R622	1-249-437-11	CARBON 47K 5%	1/4W
Q900	8-729-119-78	TRANSISTOR 2SC2785-HFE		R623	1-249-429-11	CARBON 10K 5%	1/4W
Q1200	8-729-119-78	TRANSISTOR 2SC2785-HFE		R624	1-249-393-11	CARBON 10 5%	1/4W F
Q1201	8-729-029-94	TRANSISTOR DTC143TSA		R625	1-249-434-11	CARBON 27K 5%	1/4W
Q1202	8-729-029-66	TRANSISTOR DTC114ESA		R626	1-249-430-11	CARBON 12K 5%	1/4W
Q1203	8-729-029-94	TRANSISTOR DTC143TSA		R627	1-216-347-11	METAL OXIDE 0.68 5%	1W F
Q1204	8-729-029-94	TRANSISTOR DTC143TSA		R628	1-249-415-11	CARBON 680 5%	1/4W F
< RESISTOR >				R631	Δ 1-202-968-11	CEMENTED 1.2 5%	10W
JW010	1-410-397-21	FERRITE 1.IUH		R632	1-247-807-31	CARBON 100 5%	1/4W
R500	1-215-457-00	METAL 33K 1%	1/4W	R633	1-247-807-31	CARBON 100 5%	1/4W
				R634	1-249-397-11	CARBON 22 5%	1/4W F
				R636	1-249-417-11	CARBON 1K 5%	1/4W
				R637	1-247-815-91	CARBON 220 5%	1/4W
				R638	1-247-863-91	CARBON 22K 5%	1/4W

The components identified by shading and marked Δ are critical for safety
Replace only with the part number specified.

D

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R639	1-215-425-00	METAL	1.5K 1% 1/4W	R1205	1-249-428-11	CARBON	8.2K 5% 1/4W
R641	Δ 1-240-030-91	METAL	4.7M 5% 1/2W	R1206	1-249-428-11	CARBON	8.2K 5% 1/4W
R642	Δ 1-202-968-11	CEMENTED	1.2 5% 10W	R1207	1-249-413-11	CARBON	470 5% 1/4W
R643	Δ 1-240-030-91	METAL	4.7M 5% 1/2W	R1208	1-212-849-00	FUSIBLE	4.7 5% 1/4W F
R646	1-249-377-11	CARBON	0.47 5% 1/4W F	R1209	1-212-849-00	FUSIBLE	4.7 5% 1/4W F
R647	1-202-933-61	FUSIBLE	0.1 10% 1/2W F	R1210	1-249-413-11	CARBON	470 5% 1/4W
R648	Δ 1-202-968-11	CEMENTED	1.2 5% 10W	R1211	1-249-424-11	CARBON	3.9K 5% 1/4W
R649	1-249-426-11	CARBON	5.6K 5% 1/4W	R1212	1-249-424-11	CARBON	3.9K 5% 1/4W
R800	1-249-429-11	CARBON	10K 5% 1/4W	R1213	1-249-421-11	CARBON	2.2K 5% 1/4W
R808	1-215-888-00	METAL OXIDE	220 5% 2W F	R1216	1-249-413-11	CARBON	470 5% 1/4W
R810	1-215-888-00	METAL OXIDE	220 5% 2W F	R1217	1-249-425-11	CARBON	4.7K 5% 1/4W
R812	1-249-421-11	CARBON	2.2K 5% 1/4W	R1218	1-535-465-11	LEAD, JUMPER (5.0MM)	
R813	1-249-417-11	CARBON	1K 5% 1/4W F	R1219	1-249-417-11	CARBON	1K 5% 1/4W
R814	1-249-381-11	CARBON	1 5% 1/4W F	R1220	1-247-863-91	CARBON	22K 5% 1/4W
R815	1-249-381-11	CARBON	1 5% 1/4W F	R1221	1-247-863-91	CARBON	22K 5% 1/4W
R816	1-215-917-11	METAL OXIDE	1K 5% 3W F	< RELAY >			
R818	1-215-884-11	METAL OXIDE	47 5% 2W F	RY600	Δ 1-755-018-11	RELAY	
R819	1-535-143-71	LEAD, JUMPER (7.5MM)		RY601	Δ 1-755-266-11	RELAY, AC POWER	
R820	1-249-403-11	CARBON	68 5% 1/4W	< SWITCH >			
R822	1-215-868-00	METAL OXIDE	680 5% 1W F	S801	1-572-707-11	SWITCH, LEVER	
R823	1-215-918-00	METAL OXIDE	1.5K 5% 3W F	< SPARK GAP >			
R824	1-249-420-11	CARBON	1.8K 5% 1/4W	SG801	1-519-422-11	GAP, SPARK	
R825	1-215-884-11	METAL OXIDE	47 5% 2W F	SG802	1-519-422-11	GAP, SPARK	
R826	1-260-099-11	CARBON	1K 5% 1/2W	SG803	1-519-422-11	GAP, SPARK	
R827	1-249-425-11	CARBON	4.7K 5% 1/4W	< TRANSFORMER >			
R829	1-260-120-11	CARBON	56K 5% 1/2W	T601	Δ 1-429-604-11	TRANSFORMER, CONVERTER	
R831	1-535-465-11	LEAD, JUMPER (5.0MM)		T800	1-426-981-11	TRANSFORMER, FERRITE (PMT)	
R833	1-247-887-00	CARBON	220K 5% 1/4W	T803	Δ X-4560-158-1	TRANSFORMER, ASSY FLYBACK (NX-4404//U2B4)	
R836	1-249-439-11	CARBON	68K 5% 1/4W	T804	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE	
R838	1-215-455-00	METAL	27K 1% 1/4W	< THERMISTOR >			
R840	1-247-807-31	CARBON	100 5% 1/4W	THP600	Δ 1-809-827-11	THERMISTOR, POSITIVE	
R841	1-249-418-11	CARBON	1.2K 5% 1/4W	D Board Variant Parts KV-28DS20U/28DX20U			
R844	1-535-143-11	LEAD JUMPER, (10.0MM)		< CAPACITOR >			
R849	1-249-429-11	CARBON	10K 5% 1/4W	C502	1-102-824-00	CERAMIC	470PF 5% 50V
R851	1-215-898-11	METAL OXIDE	10K 5% 2W F	C801	1-137-368-11	FILM	0.0047MF 5% 50V
R852	1-249-432-11	CARBON	18K 5% 1/4W	C814	1-136-732-11	FILM	0.021MF 3% 1.4KV
R853	1-216-361-00	METAL OXIDE	0.22 5% 2W F	C818	1-162-134-11	CERAMIC	470PF 10% 2KV
R901	1-260-082-11	CARBON	39 5% 1/2W	C830	1-126-959-11	ELECT	0.47MF 20% 50V
R902	1-260-082-11	CARBON	39 5% 1/2W	C845	1-101-880-00	CERAMIC	47PF 5% 50V
R909	1-249-429-11	CARBON	10K 5% 1/4W				
R922	1-247-807-31	CARBON	100 5% 1/4W				
R923	1-249-416-11	CARBON	820 5% 1/4W				
R1200	1-249-425-11	CARBON	4.7K 5% 1/4W				
R1201	1-249-434-11	CARBON	27K 5% 1/4W				
R1202	1-249-429-91	CARBON	10K 5% 1/4W F				
R1203	1-249-417-11	CARBON	1K 5% 1/4W				
R1204	1-249-417-11	CARBON	1K 5% 1/4W				



REF.NO. PART.NO DESCRIPTION REMARK

< DIODE >
D802 8-719-991-33 DIODE 1SS133T-77

< COIL >
L803 1-420-872-00 COIL, AIR CORE

< RESISTOR >
R504 1-215-457-00 METAL 33K 1% 1/4W
R506 1-215-441-00 METAL 6.8K 1% 1/4W
R519 1-215-443-00 METAL 8.2K 1% 1/4W
R521 1-215-455-00 METAL 27K 1% 1/4W
R610 1-215-429-00 METAL 2.2K 1% 1/4W

R802 1-215-437-00 METAL 4.7K 1% 1/4W
R803 1-247-843-11 CARBON 3.3K 5% 1/4W
R804 1-249-427-11 CARBON 6.8K 5% 1/4W
R805 1-249-435-11 METAL 33K 5% 1/4W
R828 1-215-449-00 METAL 15K 1% 1/4W

R835 1-216-471-11 METAL OXIDE 27 5% 3W F
R842 1-249-411-11 CARBON 100K 5% 1/4W
R843 1-247-891-00 CARBON 330K 5% 1/4W
R846 1-247-893-11 CARBON 390K 5% 1/4W
R847 1-247-897-11 CARBON 560K 5% 1/4W

R848 1-247-863-91 CARBON 22K 5% 1/4W

< TRANSFORMER >
T805 1-433-980-11 TRANSFORMER, HORIZONTAL LINEAR

D Board Variant Parts KV-32DS20U/32DX20U

< CAPACITOR >
C502 1-102-119-00 CERAMIC 0.0015MF 10% 50V
C801 1-137-372-11 FILM 0.022MF 5% 50V
C814 1-136-952-11 FILM 0.02MF 3% 1.4KV
C818 1-117-214-11 CERMAIC 0.001MF 10% 2KV

< DIODE >
D802 1-535-465-11 LEAD,JUMPER (5.0MM)

< COIL >
L803 1-535-465-11 LEAD,JUMPER (5.0MM)

< RESISTOR >
R504 1-215-447-00 METAL 12K 1% 1/4W
R506 1-215-455-00 METAL 27K 1% 1/4W
R519 1-215-415-00 METAL 18K 1% 1/4W

REF.NO. PART.NO DESCRIPTION REMARK

R521 1-215-459-00 METAL 39K 1% 1/4W
R610 1-215-427-00 METAL 1.8K 1% 1/4W
R802 1-215-453-00 METAL 22K 1% 1/4W
R803 1-249-427-11 CARBON 6.8K 5% 1/4W
R805 1-215-447-00 METAL 12K 1% 1/4W

R828 1-249-432-11 CARBON 18K 5% 1/4W
R835 1-215-907-11 METAL OXIDE 22 5% 3W
R837 1-215-453-00 METAL 22K 1% 1/4W
R846 1-259-883-11 CARBON 3.9M 5% 1/4W
R847 1-259-880-11 CARBON 2.2M 5% 1/4W

R848 1-259-880-11 CARBON 2.2M 5% 1/4W

< TRANSFORMER >
T805 1-435-107-11 TRANSFORMER, HORIZONTAL LINEAR

***A-1642-259-A D1 Board, Complete**

4-382-854-11 SCREW (M3X10), P, SW (+)
4-382-854-11 SCREW (M3X10), P, SW (+)
*4-931-401-01 HEAT SINK, V.OUT

< CAPACITOR >
C2201 1-102-121-00 CERAMIC 0.0022MF 10% 50V
C2202 1-102-121-00 CERAMIC 0.0022MF 10% 50V
C2203 1-126-964-11 ELECT 10MF 20% 50V
C2204 1-126-964-11 ELECT 10MF 20% 50V
C2208 1-137-194-81 FILM 0.47MF 5% 50V

C2209 1-136-177-00 FILM 1MF 5% 50V
C2210 1-136-177-00 FILM 1MF 5% 50V
C2211 1-137-194-81 FILM 0.47MF 5% 50V
C2212 1-102-074-00 CERAMIC 0.001MF 10% 50V
C2213 1-136-202-11 FILM 0.33MF 5% 63V

C2214 1-102-114-00 CERAMIC 470PF 10% 50V
C2215 1-130-777-00 FILM 0.1MF 5% 63V
C2216 1-102-125-00 CERAMIC 0.0047MF 10% 50V
C2217 1-102-106-00 CERAMIC 100PF 10% 50V
C2218 1-130-777-00 FILM 0.1MF 5% 63V

C2219 1-126-963-11 ELECT 4.7MF 20% 50V
C2220 1-130-777-00 FILM 0.1MF 5% 63V
C2221 1-130-777-00 FILM 0.1MF 5% 63V
C2222 1-130-777-00 FILM 0.1MF 5% 63V
C2223 1-126-943-11 ELECT 2200MF 20% 25V

C2224 1-126-943-11 ELECT 2200MF 20% 25V
C2501 1-104-665-11 ELECT 100MF 20% 25V
C2502 1-126-933-11 ELECT 100MF 20% 16V
C2503 1-102-228-00 CERAMIC 470PF 10% 500V
C2504 1-126-941-11 ELECT 470MF 20% 25V

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C2643	1-117-802-11	ELECT	180MF	20%	450V		
C2644	1-107-824-11	CERAMIC	220PF	5%	1KV		
C2645	1-136-169-00	FILM	0.22MF	5%	50V		
C2646	1-136-164-00	FILM	0.082MF	5%	50V		
C2647	1-107-824-11	CERAMIC	220PF	5%	1KV		
C2648	1-136-169-00	FILM	0.22MF	5%	50V		
C2649	1-136-164-00	FILM	0.082MF	5%	50V		
C2650	1-117-631-21	FILM	3300PF	3%	1.2KV		
C2651	1-136-157-00	FILM	0.022MF	5%	50V		
C2652	1-136-165-00	FILM	0.1MF	5%	50V		
C2653	1-126-965-11	ELECT	22MF	20%	50V		
C2654	1-126-967-11	ELECT	47MF	20%	50V		
C2655	1-126-941-11	ELECT	470MF	20%	25V		
C2656	1-126-967-11	ELECT	47MF	20%	50V		
C2657	1-126-967-11	ELECT	47MF	20%	50V		
C2659	1-126-936-11	ELECT	3300MF	20%	16V		
C2660	1-126-936-11	ELECT	3300MF	20%	16V		
C2661	1-126-935-11	ELECT	470MF	20%	16V		
C2662	1-126-935-11	ELECT	470MF	20%	16V		
C2685	1-107-824-11	CERAMIC	220PF	5%	1KV		
C2686	△ 1-162-599-12	CERAMIC	0.0047MF		250V		
C2687	△ 1-162-599-12	CERAMIC	0.0047MF		250V		
C2801	1-102-244-00	CERAMIC	220PF	10%	500V		
C2805	1-102-973-00	CERAMIC	100PF	5%	50V		
C2806	1-136-347-11	FILM	0.0047MF	5%	630V		
C2808	1-130-491-00	MYLAR	0.047MF	5%	50V		
C2809	1-130-483-00	MYLAR	0.01MF	5%	50V		
C2811	1-129-716-00	FILM	0.015MF	5%	630V		
C2813	1-102-228-00	CERAMIC	470PF	10%	500V		
C2814	1-129-992-00	FILM	0.0024MF	5%	630V		
C2815	1-117-455-11	FILM	22000PF	5%	630V		
C2817	1-126-933-11	ELECT	100MF	20%	16V		
C2818	1-104-665-11	ELECT	100MF	20%	25V		
C2819	1-126-933-11	ELECT	100MF	20%	16V		
C2820	1-129-725-00	FILM	0.082MF	5%	400V		
C2841	1-102-244-00	CERAMIC	220PF	10%	500V		
C2842	1-109-954-11	ELECT	0.47MF	20%	160V		
C2845	1-136-684-51	FILM	0.0022MF	5%	50V		
C2846	1-130-491-00	MYLAR	0.047MF	5%	50V		
C2847	1-126-964-11	ELECT	10MF	20%	50V		
C2848	1-136-159-00	FILM	0.033MF	5%	50V		
C2849	1-126-964-11	ELECT	10MF	20%	50V		
C2850	1-130-483-00	MYLAR	0.01MF	5%	50V		
C2851	1-136-169-00	FILM	0.22MF	5%	50V		
C2852	1-136-169-00	FILM	0.22MF	5%	50V		
C3802	1-126-965-11	ELECT	22MF	20%	50V		
C3804	1-126-965-11	ELECT	22MF	20%	50V		
< CONNECTOR >							
CN2202	*1-564-511-11	PLUG, CONNECTOR	8P				
CN2203	*1-564-506-11	PLUG, CONNECTOR	3P				
CN2503	*1-564-506-11	PLUG, CONNECTOR	3P				
CN2602	△ *1-691-291-11	PIN, CONNECTOR (PC BOARD)	5P				
CN2604	*1-568-881-51	PIN, CONNECTOR	6P				
CN2804	*1-568-879-11	PIN, CONNECTOR	4P				
CN2805	1-568-878-51	PIN, CONNECTOR	3P				
CN2806	1-695-915-11	TAB (CONTACT)					
CN2807	*1-568-881-51	PIN, CONNECTOR	6P				
CN3801	*1-568-879-11	PIN, CONNECTOR	4P				
CN3802	*1-785-270-12	PIN, DY CONNECTOR (PC BOARD)					
CN3803	*1-580-798-11	CONNECTOR PIN (DY)	6P				
< DIODE >							
D2201	8-719-109-85	DIODE RD5.1ESB2					
D2501	8-719-302-43	DIODE EL1Z					
D2502	8-719-979-85	DIODE EGP20G					
D2601	8-719-025-88	DIODE GBU4JL-6088					
D2607	8-719-991-33	DIODE 1SS133T-77					
D2615	8-719-063-73	DIODE D1NL20U-TR					
D2616	8-719-063-73	DIODE D1NL20U-TR					
D2617	8-719-991-33	DIODE 1SS133T-77					
D2619	8-719-110-57	DIODE RD22ESB2					
D2620	8-719-160-65	DIODE RD16FB2					
D2621	8-719-991-33	DIODE 1SS133T-77					
D2669	8-719-510-12	DIODE D10SC4M					
D2670	8-719-040-01	DIODE FMB-22H					
D2671	8-719-040-01	DIODE FMB-22H					
D2801	8-719-110-41	DIODE RD15ESB2					
D2802	8-719-991-33	DIODE 1SS133T-77					
D2804	8-719-302-43	DIODE EL1Z					
D2805	8-719-970-87	DIODE ERA38-06					
D2806	8-719-300-33	DIODE RU-3AM					
D2807	8-719-302-43	DIODE EL1Z					
D2808	8-719-970-87	DIODE ERA38-06					
D2810	8-719-991-33	DIODE 1SS133T-77					
D2811	8-719-991-33	DIODE 1SS133T-77					
D2812	8-719-991-33	DIODE 1SS133T-77					
D2813	8-719-991-33	DIODE 1SS133T-77					
D3801	8-719-991-33	DIODE 1SS133T-77					
D3802	8-719-991-33	DIODE 1SS133T-77					
< IC >							
IC2201	8-759-553-45	IC TDA7481					
IC2501	8-759-231-58	IC TA7812S					

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
IC2605	8-729-039-65	TRANSISTOR MX0541B-F		< RESISTOR >			
IC2606	8-759-908-15	IC TL431CLP		R2201	1-535-465-11	LEAD, JUMPER (5.0MM)	
IC2801	8-759-103-93	IC UPC393C		R2202	1-535-465-11	LEAD, JUMPER (5.0MM)	
IC2802	8-759-701-59	IC NJM78M09FA		R2203	1-101-006-00	CERAMIC 0.047MF	50V
IC2803	8-759-700-42	IC NJM2904D		R2204	1-249-429-11	CARBON 10K 5%	1/4W
< COIL >				R2205	1-247-843-11	CARBON 3.3K 5%	1/4W
L2201	1-535-465-11	LEAD, JUMPER (5.0MM)		R2206	1-247-843-11	CARBON 3.3K 5%	1/4W
L2202	1-416-857-11	INDUCTOR 65UH		R2207	1-249-429-11	CARBON 10K 5%	1/4W
L2203	1-412-529-11	INDUCTOR 22UH		R2209	1-247-897-11	CARBON 560K 5%	1/4W
L2501	1-406-665-11	INDUCTOR 100UH		R2210	1-249-417-11	CARBON 1K 5%	1/4W
L2502	1-412-519-11	INDUCTOR 3.3UH		R2211	1-249-435-11	CARBON 33K 5%	1/4W
L2614	1-412-525-31	INDUCTOR 10UH		R2212	1-249-405-11	CARBON 100 5%	1/4W F
L2615	1-412-525-31	INDUCTOR 10UH		R2213	1-249-430-11	CARBON 12K 5%	1/4W
L2616	1-535-143-11	LEAD, JUMPER (10.0MM)		R2214	1-249-422-11	CARBON 2.7K 5%	1/4W
L2801	1-535-465-11	LEAD, JUMPER (5.0MM)		R2215	1-247-815-91	CARBON 220 5%	1/4W
L2802	1-406-677-11	INDUCTOR 10MMH		R2216	1-249-434-11	CARBON 27K 5%	1/4W
L2803	1-406-989-21	INDUCTOR 10MMH		R2501	1-249-443-11	CARBON 0.47 5%	1/4W F
L2805	1-406-667-11	INDUCTOR 220UH		R2602	1-217-418-00	FUSIBLE 0.47 10%	1/2W F
L2806	1-406-679-11	INDUCTOR 22MMH		R2603	1-260-127-11	CARBON 220K 5%	1/2W
L3801	1-535-465-11	LEAD, JUMPER (5.0MM)		R2604	1-260-127-11	CARBON 220K 5%	1/2W
L3802	1-535-465-11	LEAD, JUMPER (5.0MM)		R2605	1-249-391-11	CARBON 6.8 5%	1/4W
L3803	1-535-465-11	LEAD, JUMPER (5.0MM)		R2607	1-260-127-11	CARBON 220K 5%	1/2W
< IC LINK >				R2608	1-260-127-11	CARBON 220K 5%	1/2W
PS2601 Δ	1-801-550-21	PROTECTOR, MODULE		R2609 Δ	1-202-962-11	CEMENTED 3.3 5%	10W
PS2602 Δ	1-533-597-31	LINK, IC 5A		R2647	1-249-391-11	CARBON 6.8 5%	1/4W
PS2604 Δ	1-801-550-21	PROTECTOR, MODULE		R2648	1-249-437-11	CARBON 47K 5%	1/4W
PS2606 Δ	1-801-550-21	PROTECTOR, MODULE		R2649	1-215-429-00	METAL 2.2K 1%	1/4W
PS2607 Δ	1-532-637-00	LINK, IC 1A (ICP-F25)		R2680	1-249-417-11	CARBON 1K 5%	1/4W
PS2608 Δ	1-801-549-21	PROTECTOR, MODULE		R2681	1-215-428-00	METAL 2K 1%	1/4W
< TRANSISTOR >				R2685	1-249-429-11	CARBON 10K 5%	1/4W
Q2201	8-729-030-02	TRANSISTOR DTC144ESA		R2686	1-249-377-11	CARBON 0.47 5%	1/4W F
Q2202	8-729-029-66	TRANSISTOR DTC114ESA		R2687	1-249-417-11	CARBON 1K 5%	1/4W
Q2203	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2689	1-249-429-11	CARBON 10K 5%	1/4W
Q2614	8-729-026-39	TRANSISTOR 2SA933AS-QT		R2690	1-247-807-31	CARBON 100 5%	1/4W
Q2615	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2801	1-535-465-11	LEAD, JUMPER (5.0MM)	
Q2802	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2802	1-215-919-11	METAL OXIDE 2.2K 5%	3W F
Q2805	8-729-119-76	TRANSISTOR 2SA1175-HFE		R2804	1-249-437-11	CARBON 47K 5%	1/4W
Q2806	8-729-039-68	TRANSISTOR IRF620		R2805	1-249-429-11	CARBON 10K 5%	1/4W
Q2808	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2811	1-215-445-00	METAL 10K 1%	1/4W
Q2810	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2813	1-215-469-00	METAL 100K 1%	1/4W
Q2811	8-729-140-97	TRANSISTOR 2SB734-34		R2814	1-215-445-00	METAL 10K 1%	1/4W
Q2814	8-729-043-95	TRANSISTOR 2SC3840(3)		R2815	1-215-469-00	METAL 100K 1%	1/4W
Q3801	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2816	1-215-443-00	METAL 8.2K 1%	1/4W
Q3802	8-729-119-78	TRANSISTOR 2SC2785-HFE		R2817	1-215-465-00	METAL 68K 1%	1/4W
				R2818	1-215-459-00	METAL 39K 1%	1/4W
				R2819	1-249-421-11	CARBON 2.2K 5%	1/4W

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R2820	1-249-421-11	CARBON	2.2K 5% 1/4W	*A-1644-098-A VM Board, Complete			
R2821	1-247-807-31	CARBON	100 5% 1/4W	4-382-854-11 SCREW (M3X10), P, SW (+)			
R2823	1-535-465-11	LEAD, JUMPER (5.0MM)		< CAPACITOR >			
R2824	1-249-425-11	CARBON	4.7K 5% 1/4W	C1501	1-104-664-11	ELECT	47MF 20% 16V
R2825	1-249-417-11	CARBON	1K 5% 1/4W	C1502	1-130-777-00	FILM	0.1MF 5% 63V
R2826	1-249-417-11	CARBON	1K 5% 1/4W	C1503	1-102-510-11	CERAMIC	12PF 5% 50V
R2827	1-249-441-11	CARBON	100K 5% 1/4W	C1504	1-136-177-00	FILM	1MF 5% 50V
R2828	1-249-441-11	CARBON	100K 5% 1/4W	C1505	1-136-177-00	FILM	1MF 5% 50V
R2829	1-249-441-11	CARBON	100K 5% 1/4W	C1506	1-102-973-00	CERAMIC	100PF 5% 50V
R2830	1-215-912-11	METAL OXIDE	150 5% 3W F	C1507	1-130-777-00	FILM	0.1MF 5% 63V
R2831	1-215-912-11	METAL OXIDE	150 5% 3W F	C1508	1-104-664-11	ELECT	47MF 20% 16V
R2832	1-249-379-11	CARBON	0.68 5% 1/4W F	C1509	1-136-202-11	FILM	0.33MF 5% 63V
R2840	1-215-922-11	METAL OXIDE	6.8K 5% 3W F	C1510	1-102-980-00	CERAMIC	270PF 5% 50V
R2841	1-215-922-11	METAL OXIDE	6.8K 5% 3W F	C1511	1-130-777-00	FILM	0.1MF 5% 63V
R2842	1-215-921-11	METAL OXIDE	4.7K 5% 3W F	C1512	1-130-777-00	FILM	0.1MF 5% 63V
R2843	1-215-921-11	METAL OXIDE	4.7K 5% 3W F	C1513	1-126-964-11	ELECT	10MF 20% 50V
R2844	1-249-409-11	CARBON	220 5% 1/4W F	C1514	1-126-967-11	ELECT	47MF 20% 50V
R2845	1-215-489-00	METAL	680K 1% 1/4W	C1515	1-126-967-11	ELECT	47MF 20% 50V
R2846	1-247-903-00	CARBON	1M 5% 1/4W	C1516	1-102-852-91	CERAMIC	47PF 5% 50V
R2847	1-249-429-11	CARBON	10K 5% 1/4W	C1701	1-126-933-11	ELECT	100MF 20% 16V
R2848	1-215-449-00	METAL	15K 1% 1/4W	C1702	1-126-933-11	ELECT	100MF 20% 16V
R2849	1-215-491-00	METAL	820K 1% 1/4W	C1703	1-130-491-00	MYLAR	0.047MF 5% 50V
R2850	1-215-445-00	METAL	10K 1% 1/4W	C1704	1-107-648-91	ELECT	100MF 20% 160V
R2851	1-215-445-00	METAL	10K 1% 1/4W	C1705	1-107-638-11	ELECT	33MF 20% 160V
R2852	1-215-481-00	METAL	330K 1% 1/4W	C1706	1-104-999-11	FILM	0.1MF 5% 200V
R2853	1-215-477-00	METAL	220K 1% 1/4W	C1707	1-137-397-11	FILM	0.047MF 5% 100V
R2854	1-215-457-00	METAL	33K 1% 1/4W	C1708	1-130-471-00	FILM	0.001MF 5% 50V
R2855	1-215-457-00	METAL	33K 1% 1/4W	C1709	1-130-471-00	FILM	0.001MF 5% 50V
R2856	1-247-807-31	CARBON	100 5% 1/4W	C1710	1-102-959-91	CERAMIC	22PF 5% 50V
R2857	1-249-413-11	CARBON	470 5% 1/4W	C1711	1-126-962-11	ELECT	3.3MF 20% 50V
R2858	1-249-424-11	CARBON	3.9K 5% 1/4W	C1720	1-107-667-11	ELECT	2.2MF 20% 160V
R2859	1-247-807-31	CARBON	100 5% 1/4W	C1721	1-137-397-11	FILM	0.047MF 5% 100V
R2860	1-215-886-11	METAL OXIDE	100 5% 2W F	C1722	1-126-935-11	ELECT	470MF 20% 16V
R2861	1-215-886-11	METAL OXIDE	100 5% 2W F	C1723	1-161-830-00	CERAMIC	0.0047MF 500V
R3801	1-249-421-11	CARBON	2.2K 5% 1/4W	C1725	1-128-551-11	ELECT	22MF 20% 25V
R3804	1-249-421-11	CARBON	2.2K 5% 1/4W	C1726	1-136-153-00	FILM	0.01MF 5% 50V
< RELAY >				C1801	1-104-664-11	ELECT	47MF 20% 25V
RY3801	1-755-172-11	RELAY		C1803	1-137-368-11	FILM	0.0047MF 5% 50V
RY3802	1-755-172-11	RELAY		C1804	1-126-964-11	ELECT	10MF 20% 50V
< TRANSFORMER >				C1805	1-137-364-91	FILM	0.001MF 5% 50V
T2602	1-431-616-11	TRANSFORMER, CONVERTER		< CONNECTOR >			
T2603	1-433-490-11	TRANSFORMER, CONVERTER (PIT)		CN1501	*1-564-506-11	PLUG, CONNECTOR 3P	
T2801	1-433-849-11	TRANSFORMER, FERRITE (DFT)		CN1502	*1-564-508-11	PLUG, CONNECTOR 5P	
T3801	1-419-090-11	COIL, CHOKE (100UH)		CN1503	*1-564-506-11	PLUG, CONNECTOR 3P	
T3802	1-419-090-11	COIL, CHOKE (100UH)					

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
CN1716	*1-568-880-51	PIN, CONNECTOR 5P		Q1709	8-729-119-78	TRANSISTOR 2SC2785-HFE	
CN1717	*1-568-881-51	PIN, CONNECTOR 6P					
CN1718	*1-770-723-11	CONNECTOR, BOARD TO BOARD 8P			< RESISTOR >		
CN1719	1-568-878-51	PIN, CONNECTOR 3P					
CN1801	*1-564-508-11	PLUG, CONNECTOR 5P		R1505	1-249-437-11	CARBON 47K 5%	1/4W
				R1506	1-249-421-11	CARBON 2.2K 5%	1/4W
CN1802	*1-568-878-51	PIN, CONNECTOR 3P		R1507	1-247-843-11	CARBON 3.3K 5%	1/4W
				R1508	1-249-421-11	CARBON 2.2K 5%	1/4W
				R1509	1-247-843-11	CARBON 3.3K 5%	1/4W
	< DIODE >						
D1501	8-719-991-33	DIODE 1SS133T-77		R1510	1-249-421-11	CARBON 2.2K 5%	1/4W
D1502	8-719-991-33	DIODE 1SS133T-77		R1511	1-249-441-11	CARBON 100K 5%	1/4W
D1503	8-719-991-33	DIODE 1SS133T-77		R1512	1-249-417-11	CARBON 1K 5%	1/4W
D1504	8-719-991-33	DIODE 1SS133T-77		R1513	1-249-441-11	CARBON 100K 5%	1/4W
D1505	1-535-465-11	LEAD, JUMPER (5.0MM)		R1514	1-260-321-71	CARBON 270 5%	1/2W
D1506	8-719-911-19	DIODE 1SS119-25		R1515	1-249-417-11	CARBON 1K 5%	1/4W
D1701	8-719-991-33	DIODE 1SS133T-77		R1516	1-247-895-91	CARBON 470K 5%	1/4W
D1702	8-719-110-88	DIODE RD39ESB2		R1517	1-247-807-31	CARBON 100 5%	1/4W
D1703	8-719-110-88	DIODE RD39ESB2		R1518	1-247-807-31	CARBON 100 5%	1/4W
D1801	8-719-929-15	DIODE MTZJ-9.1B		R1520	1-247-883-00	CARBON 150K 5%	1/4W
	< IC >			R1521	1-249-429-11	CARBON 10K 5%	1/4W
IC1501	8-759-478-66	IC CXA8070P		R1522	1-249-421-11	CARBON 2.2K 5%	1/4W
IC1502	8-759-903-16	IC LM318P		R1523	1-249-429-11	CARBON 10K 5%	1/4W
IC1801	8-759-701-59	IC NJM78M09FA		R1525	1-215-453-00	METAL 22K 1%	1/4W
IC1802	8-759-603-37	IC M5216P		R1526	1-215-437-00	METAL 4.7K 1%	1/4W
	< COIL >			R1527	1-215-437-00	METAL 4.7K 1%	1/4W
L1701	1-535-465-11	LEAD, JUMPER (5.0MM)		R1528	1-249-429-11	CARBON 10K 5%	1/4W
L1703	1-408-603-31	INDUCTOR 10UH		R1532	1-215-445-00	METAL 10K 1%	1/4W
L1704	1-408-603-31	INDUCTOR 10UH		R1534	1-247-807-31	CARBON 100 5%	1/4W
				R1535	1-215-443-00	METAL 8.2K 1%	1/4W
	< IC LINK >			R1536	1-249-421-11	CARBON 2.2K 5%	1/4W
PS1801 Δ	1-532-605-00	LINK, IC 0.4A (ICP-F10)		R1537	1-249-421-11	CARBON 2.2K 5%	1/4W
				R1538	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
				R1539	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
				R1540	1-216-393-00	METAL OXIDE 2.2 5%	3W F
	< TRANSISTOR >						
Q1501	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1541	1-215-886-11	METAL OXIDE 100 5%	2W F
Q1502	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1542	1-215-473-00	METAL 150K 1%	1/4W
Q1503	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1701	1-249-397-11	CARBON 22 5%	1/4W F
Q1504	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1702	1-247-807-31	CARBON 100 5%	1/4W
Q1505	8-729-017-05	TRANSISTOR 2SA1837		R1703	1-249-416-11	CARBON 820 5%	1/4W
Q1506	8-729-017-06	TRANSISTOR 2SC4793		R1704	1-247-807-31	CARBON 100 5%	1/4W
Q1701	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1706	1-247-815-91	CARBON 220 5%	1/4W
Q1702	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1707	1-249-411-11	CARBON 330 5%	1/4W
Q1703	8-729-017-05	TRANSISTOR 2SA1837		R1708	1-249-417-11	CARBON 1K 5%	1/4W
Q1704	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1710	1-249-403-11	CARBON 68 5%	1/4W
Q1705	8-729-119-76	TRANSISTOR 2SA1175-HFE		R1711	1-249-403-11	CARBON 68 5%	1/4W
Q1706	8-729-017-06	TRANSISTOR 2SC4793		R1712	1-212-974-00	FUSIBLE 47 5%	1/2W F
Q1708	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1713	1-249-386-11	CARBON 2.7 5%	1/4W F
				R1714	1-249-414-11	CARBON 560 5%	1/4W F

The components identified by shading and marked Δ are critical for safety
Replace only with the part number specified.



REF. NO.	PART.NO	DESCRIPTION	REMARK	REF. NO.	PART.NO	DESCRIPTION	REMARK
R1715	1-249-432-11	CARBON	18K 5% 1/4W	CN5603	Δ *1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	
R1716	1-249-417-11	CARBON	1K 5% 1/4W F	CN5900	1-694-564-11	TERMINAL BLOCK, S	
R1717	1-216-476-11	METAL OXIDE	180 5% 3W F	CN5901	*1-568-882-51	PIN, CONNECTOR 7P	
R1718	1-249-432-11	CARBON	18K 5% 1/4W	CN5903	*1-564-516-11	PLUG, CONNECTOR 13P	
R1719	1-249-385-11	CARBON	2.2 5% 1/4W F	CN5916	1-568-878-51	PIN, CONNECTOR 3P	
R1720	1-247-696-11	CARBON	47 5% 1/4W F	< DIODE >			
R1721	1-249-414-11	CARBON	560 5% 1/4W F	D5602	8-719-991-33	DIODE 1SS133T-77	
R1722	1-249-401-11	CARBON	47 5% 1/4W	D5639	8-719-109-93	DIODE RD6.2ESB2	
R1723	1-535-465-11	LEAD, JUMPER (5.0MM)		D5640	8-719-063-70	DIODE D1NL20U	
R1724	1-249-417-11	CARBON	1K 5% 1/4W	D5642	8-719-510-53	DIODE D4SB60L	
R1725	1-249-417-11	CARBON	1K 5% 1/4W	D5901	8-719-030-11	DIODE SLA-570KT3F	
R1726	1-249-429-11	CARBON	10K 5% 1/4W	*4-203-258-11 HOLDER, LED (D5901)			
R1727	1-249-431-11	CARBON	15K 5% 1/4W	D5906	8-719-109-89	DIODE RD5.6ESB2	
R1728	1-249-408-11	CARBON	180 5% 1/4W	D5907	8-719-109-89	DIODE RD5.6ESB2	
R1729	1-249-408-11	CARBON	180 5% 1/4W	D5910	8-719-923-60	DIODE MTZJ-T-77-9.1A	
R1730	1-249-417-11	CARBON	1K 5% 1/4W	< FUSE >			
R1731	1-249-414-11	CARBON	560 5% 1/4W	F5601	Δ 1-576-232-21	FUSE (H.B.C.) 5A/250V	
R1806	1-247-883-00	CARBON	150K 5% 1/4W	Δ *1-533-725-11 HOLDER, FUSE (F5601)			
R1807	1-249-429-11	CARBON	10K 5% 1/4W	< FERRITE BEAD >			
R1808	1-249-429-11	CARBON	10K 5% 1/4W	FB5901	1-535-465-11	LEAD, JUMPER (5.0MM)	
R1809	1-249-429-11	CARBON	10K 5% 1/4W	FB5902	1-535-465-11	LEAD, JUMPER (5.0MM)	
R1810	1-249-429-11	CARBON	10K 5% 1/4W	< IC >			
*A-1647-029-A H Board, Complete				IC5604	8-759-510-52	IC TEA7605	
< CAPACITOR >				IC5605	8-759-584-19	IC TNY253P	
C5617	1-126-941-11	ELECT	470MF 20% 25V	IC5606	Δ 8-749-013-21	IC TLP721(D4-GR.T)	
C5621	1-136-165-00	FILM	0.1MF 5% 50V	IC5900	8-742-014-11	HYB IC SBX1981-51	
C5623	1-104-666-11	ELECT	220MF 20% 25V	< SOCKET >			
C5633	Δ 1-107-563-11	FILM	0.1MF 20% 300V	J5900	1-785-448-11	JACK	
C5635	Δ 1-107-563-11	FILM	0.1MF 20% 300V	< COIL >			
C5654	1-136-165-00	FILM	0.1MF 5% 50V	L5608	1-412-527-11	INDUCTOR 15UH	
C5655	1-107-974-11	CERAMIC	47PF 5% 2KV	L5901	1-408-603-31	INDUCTOR 10UH	
C5657	1-126-967-11	ELECT	47MF 20% 50V	L5902	1-408-603-31	INDUCTOR 10UH	
C5658	1-107-679-91	ELECT	10MF 20% 450V	L5903	1-408-603-31	INDUCTOR 10UH	
C5901	1-102-106-00	CERAMIC	100PF 10% 50V	L5904	1-408-603-31	INDUCTOR 10UH	
C5902	1-137-372-11	FILM	0.022MF 5% 50V	< TRANSISTOR >			
C5903	1-137-372-11	FILM	0.022MF 5% 50V	Q5601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
C5904	1-104-665-11	ELECT	100MF 20% 25V				
C5905	1-126-964-11	ELECT	10MF 20% 50V				
C5907	1-126-964-11	ELECT	10MF 20% 50V				
C5911	1-126-964-11	ELECT	10MF 20% 50V				
C5913	1-102-106-00	CERAMIC	100PF 10% 50V				
< CONNECTOR >							
CN5601	Δ *1-580-844-11	PIN, CONNECTOR (POWER)					
CN5602	Δ *1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P					

REF.NO.	PART.NO	DESCRIPTION	REMARK		
< RESISTOR >					
R5601	1-247-807-31	CARBON	100	5%	1/4W
R5602	1-249-389-11	CARBON	4.7	5%	1/4W F
R5603	1-535-465-11	LEAD, JUMPER (5.0MM)			
R5629	△ 1-260-135-11	CARBON	1M	5%	1/2W
R5630	△ 1-205-998-11	CEMENTED	1	5%	10W
R5641	1-249-417-11	CARBON	1K	5%	1/4W
R5653	1-215-863-11	METAL OXIDE	100	5%	1W F
R5900	1-247-815-91	CARBON	220	5%	1/4W
R5901	1-249-401-11	CARBON	47	5%	1/4W
R5904	1-249-389-11	CARBON	4.7	5%	1/4W F
R5910	1-249-422-11	CARBON	2.7K	5%	1/4W
R5911	1-249-426-11	CARBON	5.6K	5%	1/4W
R5912	1-249-429-11	CARBON	10K	5%	1/4W
R5913	1-247-863-91	CARBON	22K	5%	1/4W
R5914	1-249-437-11	CARBON	47K	5%	1/4W
R5919	1-249-437-11	CARBON	47K	5%	1/4W
R5921	1-249-437-11	CARBON	47K	5%	1/4W
< RELAY >					
RY5602	△ 1-755-245-11	RELAY, AC POWER			
< SWITCH >					
S5601	△ 1-571-433-21	SWITCH, PUSH (AC POWER)			
S5900	1-692-979-11	SWITCH, TACTILE			
S5901	1-692-979-11	SWITCH, TACTILE			
S5902	1-692-979-11	SWITCH, TACTILE			
< TRANSFORMER >					
LF5600	△ 1-431-402-11	TRANSFORMER, LINE FILTER			
LF5601	△ 1-431-402-11	TRANSFORMER, LINE FILTER			
T5602	△ 1-433-925-11	TRANSFORMER, CONVERTER			
< VARISTOR >					
VDR5601	△ 1-801-268-51	VARISTOR ERZV14D471			
	△ *4-374-846-01	COVER, CAPACITOR, CAP TYPE (VDR560)			
*A-1651-115-A J Board, Complete (KV-28DS20U/32DS20U only)					
< CAPACITOR >					
C3201	1-101-004-00	CERAMIC	0.01MF		50V
C3203	1-101-005-00	CERAMIC	0.022MF		50V
C3204	1-101-005-00	CERAMIC	0.022MF		50V
C3205	1-101-005-00	CERAMIC	0.022MF		50V
C3206	1-101-003-00	CERAMIC	0.0047MF		50V

REF.NO.	PART.NO	DESCRIPTION	REMARK		
C3207	1-101-005-00	CERAMIC	0.022MF		50V
C3208	1-101-005-00	CERAMIC	0.022MF		50V
C3211	1-101-005-00	CERAMIC	0.022MF		50V
C3212	1-101-005-00	CERAMIC	0.022MF		50V
C3215	1-101-005-00	CERAMIC	0.022MF		50V
< CONNECTOR >					
CN3201	*1-770-748-11	CONNECTOR, BOARD TO BOARD 12P			
CN3202	*1-564-507-11	PLUG, CONNECTOR 4P			
CN3203	*1-564-507-11	PLUG, CONNECTOR 4P			
< SOCKET >					
J3201	1-694-591-11	TERMINAL BOARD, SPEAKER			
< RESISTOR >					
R3201	1-249-426-11	CARBON	5.6K	5%	1/4W
R3202	1-249-426-11	CARBON	5.6K	5%	1/4W
R3203	1-249-426-11	CARBON	5.6K	5%	1/4W
R3204	1-249-426-11	CARBON	5.6K	5%	1/4W
R3205	1-247-807-31	CARBON	100	5%	1/4W
< SWITCH >					
S3201	1-771-784-11	SWITCH, PUSH BUTTON			
*A-1652-067-A N Board, Complete					
< CAPACITOR >					
C3101	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3102	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3103	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C3104	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3105	1-126-964-11	ELECT	10MF	20%	50V
C3106	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3107	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3109	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C3110	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C3112	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3113	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3114	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3115	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C3116	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3118	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3121	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3122	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C3128	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C3129	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V

REF.NO.	PART.NO	DESCRIPTION	REMARK		REF.NO.	PART.NO	DESCRIPTION	REMARK	
C3130	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3318	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3131	1-163-263-11	CERAMIC CHIP 330PF	5%	50V	C3319	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C3132	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3320	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3134	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3323	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3135	1-163-222-11	CERAMIC CHIP 5PF	0.25PF	50V	C3324	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3136	1-163-222-11	CERAMIC CHIP 5PF	0.25PF	50V	C3325	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3137	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3326	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C3138	1-107-888-11	ELECT 47MF	20%	25V	C3327	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C3142	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3328	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3143	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3329	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3201	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3330	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3202	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3331	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3203	1-126-964-11	ELECT 10MF	20%	50V	C3332	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C3204	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3333	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3205	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3334	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3206	1-126-964-11	ELECT 10MF	20%	50V	C3336	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3207	1-126-964-11	ELECT 10MF	20%	50V	C3337	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3208	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	C3339	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3209	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	C3340	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3210	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3341	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3211	1-126-964-11	ELECT 10MF	20%	50V	C3342	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3212	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3343	1-163-263-11	CERAMIC CHIP 330PF	5%	50V
C3213	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C3344	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3214	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3345	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3215	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3346	1-107-888-11	ELECT 47MF	20%	25V
C3216	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3347	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3217	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3401	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3218	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3402	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3219	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3412	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3220	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C3413	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3221	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C3414	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3222	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3415	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3223	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3416	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3224	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3417	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3225	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C3418	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3226	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3419	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3227	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3420	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3228	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	C3421	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3229	1-163-227-11	CERAMIC CHIP 10PF	0.5PF	50V	C3422	1-163-038-91	CERAMIC CHIP 0.1MF	25V	
C3230	1-107-888-11	ELECT 47MF	20%	25V	C3425	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V
C3231	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	< FILTER >				
C3232	1-107-888-11	ELECT 47MF	20%	25V	CF3101	1-543-948-22	FERRITE	0UH	
C3233	1-163-263-11	CERAMIC CHIP 330PF	5%	50V	CF3102	1-543-948-22	FERRITE	0UH	
C3305	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	CF3104	1-543-948-22	FERRITE	0UH	
C3308	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V	CF3106	1-216-295-91	SHORT	0	
C3311	1-107-888-11	ELECT 47MF	20%	25V	CF3108	1-543-948-22	FERRITE	0UH	
C3315	1-163-021-91	CERAMIC CHIP 0.01MF	10%	50V					

138

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
IC3315	8-759-577-89	IC 74LV273D-118		R3122	1-216-017-91	RES,CHIP 47 5%	1/10W
IC3316	8-759-542-08	IC 74LV373D-118		R3124	1-216-017-91	RES,CHIP 47 5%	1/10W
IC3317	8-759-542-07	IC 74LV244D-118		R3125	1-216-295-91	SHORT 0	
IC3318	8-759-560-75	IC 74LV157D-118		R3126	1-216-049-91	RES,CHIP 1K 5%	1/10W
IC3320	8-759-492-09	IC 74LV00D-118		R3128	1-216-057-00	RES,CHIP 2.2K 5%	1/10W
IC3321	8-759-271-86	IC TC7SH04FU		R3129	1-216-295-91	SHORT 0	
IC3402	8-759-542-07	IC 74LV244D-118		R3130	1-216-295-91	SHORT 0	
IC3403	8-759-542-06	IC 74LV245D-118		R3132	1-216-017-91	RES,CHIP 47 5%	1/10W
IC3404	8-759-542-07	IC 74LV244D-118		R3133	1-216-017-91	RES,CHIP 47 5%	1/10W
IC3405	8-759-542-07	IC 74LV244D-118		R3134	1-216-017-91	RES,CHIP 47 5%	1/10W
IC3406	8-752-394-14	IC CXD1957Q-TL		R3135	1-216-017-91	RES,CHIP 47 5%	1/10W
IC3407	8-759-542-07	IC 74LV244D-118		R3136	1-216-295-91	SHORT 0	
IC3408	8-759-542-07	IC 74LV244D-118		R3138	1-216-295-91	SHORT 0	
IC3409	8-759-542-07	IC 74LV244D-118		R3141	1-216-025-91	RES,CHIP 100 5%	1/10W
IC3410	8-759-542-07	IC 74LV244D-118		R3142	1-216-025-91	RES,CHIP 100 5%	1/10W
IC3411	8-759-542-07	IC 74LV244D-118		R3143	1-216-025-91	RES,CHIP 100 5%	1/10W
IC3412	*8-759-346-63	IC MIC2560-0BWM-T&R		R3144	1-216-025-91	RES,CHIP 100 5%	1/10W
IC3413	8-759-271-86	IC TC7SH04FU		R3145	1-216-025-91	RES,CHIP 100 5%	1/10W
IC3416	8-759-234-77	IC TC4S66F		R3146	1-216-025-91	RES,CHIP 100 5%	1/10W
	< TRANSISTOR >			R3147	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3101	1-801-806-11	TRANSISTOR DTC144EKA-T146		R3148	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3201	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R3149	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3202	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R3150	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3301	8-729-106-60	TRANSISTOR 2SB1115A-YQ		R3151	1-216-017-91	RES,CHIP 47 5%	1/10W
Q3302	1-801-806-11	TRANSISTOR DTC144EKA-T146		R3154	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3303	1-801-806-11	TRANSISTOR DTC144EKA-T146		R3155	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3401	1-801-806-11	TRANSISTOR DTC144EKA-T146		R3156	1-216-025-91	RES,CHIP 100 5%	1/10W
Q3402	1-801-806-11	TRANSISTOR DTC144EKA-T146		R3157	1-216-025-91	RES,CHIP 100 5%	1/10W
	< RESISTOR >			R3158	1-216-025-91	RES,CHIP 100 5%	1/10W
R3102	1-216-025-91	RES,CHIP 100 5%	1/10W	R3159	1-216-025-91	RES,CHIP 100 5%	1/10W
R3103	1-216-025-91	RES,CHIP 100 5%	1/10W	R3160	1-216-025-91	RES,CHIP 100 5%	1/10W
R3105	1-216-025-91	RES,CHIP 100 5%	1/10W	R3161	1-216-025-91	RES,CHIP 100 5%	1/10W
R3107	1-216-025-91	RES,CHIP 100 5%	1/10W	R3201	1-216-683-11	METAL CHIP 22K 0.50%	1/10W
R3108	1-216-073-00	RES,CHIP 10K 5%	1/10W	R3202	1-216-065-00	RES,CHIP 4.7K 5%	1/10W
R3109	1-216-049-91	RES,CHIP 1K 5%	1/10W	R3203	1-216-065-00	RES,CHIP 4.7K 5%	1/10W
R3110	1-216-049-91	RES,CHIP 1K 5%	1/10W	R3204	1-216-683-11	METAL CHIP 22K 0.50%	1/10W
R3111	1-216-049-91	RES,CHIP 1K 5%	1/10W	R3205	1-216-043-91	RES,CHIP 560 5%	1/10W
R3112	1-216-025-91	RES,CHIP 100 5%	1/10W	R3206	1-216-675-91	METAL CHIP 10K 0.50%	1/10W
R3113	1-216-025-91	RES,CHIP 100 5%	1/10W	R3207	1-216-073-00	RES,CHIP 10K 5%	1/10W
R3114	1-216-049-91	RES,CHIP 1K 5%	1/10W	R3208	1-216-689-11	RES,CHIP 39K 5%	1/10W
R3115	1-216-049-91	RES,CHIP 1K 5%	1/10W	R3209	1-216-689-11	RES,CHIP 39K 5%	1/10W
R3116	1-216-295-91	SHORT 0		R3210	1-216-675-91	METAL CHIP 10K 0.50%	1/10W
R3117	1-216-295-91	SHORT 0		R3211	1-216-073-00	RES,CHIP 10K 5%	1/10W
R3120	1-216-025-91	RES,CHIP 100 5%	1/10W	R3212	1-216-057-00	RES,CHIP 2.2K 5%	1/10W
R3121	1-216-017-91	RES,CHIP 47 5%	1/10W	R3213	1-216-057-00	RES,CHIP 2.2K 5%	1/10W
				R3214	1-216-295-91	SHORT 0	
				R3215	1-216-073-00	RES,CHIP 10K 5%	1/10W



REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R3216	1-216-061-00	RES,CHIP	3.3K	5%	1/10W	R3340	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3217	1-216-025-91	RES,CHIP	100	5%	1/10W	R3341	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3218	1-216-025-91	RES,CHIP	100	5%	1/10W	R3342	1-216-295-91	SHORT	0		
R3219	1-216-025-91	RES,CHIP	100	5%	1/10W	R3343	1-216-295-91	SHORT	0		
R3220	1-216-025-91	RES,CHIP	100	5%	1/10W	R3346	1-216-025-91	RES,CHIP	100	5%	1/10W
R3222	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3347	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3223	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3348	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3224	1-216-061-00	RES,CHIP	3.3K	5%	1/10W	R3349	1-216-017-91	RES,CHIP	47	5%	1/10W
R3226	1-216-017-91	RES,CHIP	47	5%	1/10W	R3350	1-216-295-91	SHORT	0		
R3227	1-216-295-91	SHORT	0			R3351	1-216-295-91	SHORT	0		
R3228	1-216-022-00	RES,CHIP	75	5%	1/10W	R3352	1-216-295-91	SHORT	0		
R3229	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3354	1-216-295-91	SHORT	0		
R3230	1-216-025-91	RES,CHIP	100	5%	1/10W	R3355	1-216-295-91	SHORT	0		
R3231	1-216-025-91	RES,CHIP	100	5%	1/10W	R3357	1-216-295-91	SHORT	0		
R3232	1-216-025-91	RES,CHIP	100	5%	1/10W	R3359	1-216-295-91	SHORT	0		
R3233	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3361	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3234	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3362	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3235	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3401	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3237	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3402	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3238	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3403	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3239	1-216-025-91	RES,CHIP	100	5%	1/10W	R3404	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3240	1-216-025-91	RES,CHIP	100	5%	1/10W	R3405	1-216-081-00	RES,CHIP	22K	5%	1/10W
R3241	1-216-025-91	RES,CHIP	100	5%	1/10W	R3406	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3244	1-216-017-91	RES,CHIP	47	5%	1/10W	R3408	1-216-295-91	SHORT	0		
R3245	1-216-017-91	RES,CHIP	47	5%	1/10W	R3410	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3246	1-216-017-91	RES,CHIP	47	5%	1/10W	R3411	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3301	1-216-025-91	RES,CHIP	100	5%	1/10W	R3412	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3302	1-216-025-91	RES,CHIP	100	5%	1/10W	R3416	1-216-017-91	RES,CHIP	47	5%	1/10W
R3303	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3417	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3304	1-216-295-91	SHORT	0			R3418	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3305	1-216-025-91	RES,CHIP	100	5%	1/10W	R3419	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3306	1-216-025-91	RES,CHIP	100	5%	1/10W	R3420	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3307	1-216-025-91	RES,CHIP	100	5%	1/10W	R3421	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3309	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3422	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3310	1-216-073-00	RES,CHIP	10K	5%	1/10W	R3423	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3311	1-216-043-91	RES,CHIP	560	5%	1/10W	R3424	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3313	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3425	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3315	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3426	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3327	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3427	1-216-049-91	RES,CHIP	1K	5%	1/10W
R3328	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3428	1-216-017-91	RES,CHIP	47	5%	1/10W
R3329	1-216-049-91	RES,CHIP	1K	5%	1/10W	R3430	1-216-295-91	SHORT	0		
R3330	1-216-049-91	RES,CHIP	1K	5%	1/10W	< RESISTOR CHIP NETWORK >					
R3331	1-216-049-91	RES,CHIP	1K	5%	1/10W	RB3105	1-233-575-11	RES, CHIP NETWORK	22		
R3332	1-216-049-91	RES,CHIP	1K	5%	1/10W	RB3106	1-233-575-11	RES, CHIP NETWORK	22		
R3333	1-216-049-91	RES,CHIP	1K	5%	1/10W	RB3107	1-233-575-11	RES, CHIP NETWORK	22		
R3338	1-216-295-91	SHORT	0			RB3108	1-233-575-11	RES, CHIP NETWORK	22		
R3339	1-216-049-91	RES,CHIP	1K	5%	1/10W						

The components identified by shading and marked Δ are critical for safety
Replace only with the part number specified.

N

REF. NO.	PART.NO	DESCRIPTION	REMARK	REF. NO.	PART.NO	DESCRIPTION	REMARK
RB3110	1-233-575-11	RES, CHIP NETWORK 22		MISCELLANEOUS			
RB3111	1-233-575-11	RES, CHIP NETWORK 22		Δ	1-416-466-11	COIL, DEMAGNETIC (KV-28DS20U/28DX20U)	
RB3112	1-233-575-11	RES, CHIP NETWORK 22		Δ	1-416-769-11	COIL, DEMAGNETIC (KV-32DS20U/32DX20U)	
RB3113	1-233-575-11	RES, CHIP NETWORK 22			1-425-032-00	MAGNETIC, DISK; 10MM	
RB3114	1-233-575-11	RES, CHIP NETWORK 22			1-452-094-00	MAGNET, ROTATABLE DISK; 15MM	
RB3115	1-233-575-11	RES, CHIP NETWORK 22		Δ	X-4560-158-1	TRANSFORMER ASSY, FLYBACK (NX-4404//U2B4)	
RB3116	1-233-575-11	RES, CHIP NETWORK 22			1-529-408-11	SPEAKER (4.2x24CM)	
RB3117	1-233-575-11	RES, CHIP NETWORK 22			1-529-417-11	SUB WOOFER SPEAKER (8CM)	
RB3118	1-233-575-11	RES, CHIP NETWORK 22			1-452-896-11	COIL, NA ROTATION (RT200)	
RB3119	1-239-409-11	RES, CHIP NETWORK 47 (3216)		Δ	1-571-433-21	SWITCH, PUSH (AC POWER)	
RB3120	1-239-409-11	RES, CHIP NETWORK 47 (3216)		Δ	1-776-204-12	CORD, POWER	
RB3201	1-233-575-11	RES, CHIP NETWORK 22			1-693-339-11	TUNER/VIF (UK)	
RB3202	1-233-575-11	RES, CHIP NETWORK 22		Δ	8-737-786-05	PICTURE TUBE (W66LLX060X) SD-299 (KV-28DS20U/28DX20U)	
RB3203	1-233-575-11	RES, CHIP NETWORK 22		Δ	8-735-054-05	PICTURE TUBE (W76LLZ060X) SD302 (KV-32DS20U/32DX20U)	
RB3204	1-233-575-11	RES, CHIP NETWORK 22					
RB3205	1-233-575-11	RES, CHIP NETWORK 22		Δ	1-451-481-11	DEFLECTION YOKE (Y28RVC2) (KV-28DS20U/28DX20U)	
RB3206	1-233-575-11	RES, CHIP NETWORK 22		Δ	1-451-480-11	DEFLECTION YOKE (Y32RVC2) (KV-32DS20U/32DX20U)	
RB3207	1-233-575-11	RES, CHIP NETWORK 22		Δ	8-453-011-11	NECK ASSY, NA299-M	
RB3208	1-233-575-11	RES, CHIP NETWORK 22		Δ	1-251-807-11	CAP ASSY, HIGH VOLTAGE	
RB3209	1-239-409-11	RES, CHIP NETWORK 47 (3216)		ACCESSORIES AND PACKAGING MATERIALS			
RB3210	1-239-409-11	RES, CHIP NETWORK 47 (3216)			4-204-891-61	MANUAL INSTRUCTION (KV-28DS20U/32DS20U) (ENGLISH)	
RB3301	1-239-409-11	RES, CHIP NETWORK 47 (3216)			4-204-864-61	MANUAL INSTRUCTION (KV-28DX20U/32DX20U) (ENGLISH)	
RB3302	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-395-957-01	BAG PROTECTION	
RB3303	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-204-457-03	INDIVIDUAL CARTON (KV-28DS20U/28DX20U)	
RB3304	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-204-378-02	INDIVIDUAL CARTON (KV-32DS20U/32DX20U)	
RB3305	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-204-676-01	CUSHION (UPPER) (ASSY) (KV-28DS20U/28DX20U)	
RB3306	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-204-682-01	CUSHION (UPPER) (ASSY) (KV-32DS20U/32DX20U)	
RB3307	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-204-677-01	CUSHION (LOWER) (ASSY) (KV-28DS20U/28DX20U)	
RB3308	1-239-409-11	RES, CHIP NETWORK 47 (3216)			*4-204-683-01	CUSHION (LOWER) (ASSY) (KV-32DS20U/32DX20U)	
RB3309	1-239-409-11	RES, CHIP NETWORK 47 (3216)		REMOTE COMMANDER			
RB3310	1-239-409-11	RES, CHIP NETWORK 47 (3216)			1-418-595-11	REMOTE COMMANDER (RM-888)	
RB3311	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3312	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3313	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3314	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3315	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3316	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3317	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3319	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3320	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
RB3321	1-239-409-11	RES, CHIP NETWORK 47 (3216)					
	< CRYSTAL >						
X3102	1-781-212-21	VIBRATOR, CRYSTAL					

